

**EVALUATION
TECHNOLOGIES
INCORPORATED**



AN EVALUATION REPORT
FOR THE
DESIGN COMPETITION SUBCATEGORY
OF THE
DESIGN ARTS PROGRAM

Submitted to:

Design Arts Program
National Endowment for the Arts

Submitted by:

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Mr. Peter Smith
Design Arts Program
National Endowment for the Arts
1100 Pennsylvania Avenue, N.W.
Washington, D.C. 20506

Reference: Contract Number NEA DC 85-5

Dear Mr. Smith:

Enclosed please find the final report of the evaluation conducted for the Design Competition Subcategory.


This evaluation was implemented along the basic framework of the evaluation design, which included two principle objectives. These were: (1) Determine the extent to which the design competitions funded by the Endowment have a high likelihood of being carried out; and (2) Determine the extent to which the design competitions funded by the Endowment enable the public to become aware of/participate in the design process. These two objectives were analyzed primarily through a series of variables incorporating management and publicity data, and examined by individual grantee from 1982 and in the aggregate.

This document is submitted for your review. Questions and comments are welcomed.

Sincerely,

BARBARA J. WAITE
Project Manager

cc: H. Horowitz



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EXECUTIVE SUMMARY

Study Purpose and Evaluation Design

This evaluation report contains the results of a test of the evaluation design developed by Evaluation Technologies Incorporated (ETI) for the Design Arts Program under a previous contract with the National Endowment for the Arts (The Design Arts Program, The Design Competition Subcategory: A Goal-Based Evaluation Design; April 24, 1984).

The evaluation design examined two primary goals of the Design Competition Subcategory: the support of (1) competitions which have a high likelihood of being carried out, and (2) those which enable the public to become aware of and take part in the design process. The evaluation was based on the assumption that a competition's management and administrative procedures would have a significant bearing on the attainment of those goals. As a result, the evaluation design stressed the project administration process and included variables on professional advisors, schedules and funding levels. These were studied based on the hypothesis that a well-managed project would have a higher likelihood of being carried out. The second goal, involving public involvement, was analyzed through variables examining the level of funding allocated to publicity, as well as the number and types of advertising produced out of that amount.

Evaluation Data

The data are drawn from the grantees funded by Design Arts since FY 1982. This produced a total of 32 grantees, including 24 competitions and 8 charrettes. Grantees funded prior to FY 1982 were excluded because of the differences in reporting requirements and the probability of missing data (tracked via phone interviews) being irrecoverable. The various indicators used to assess management performance or level of publicity were drawn from extensive discussions with program staff knowledgeable in the availability of existing data and the likelihood of additional and/or supplementary informa-

tion being readily obtainable from the grantees. Grant files constitute the primary data source, including especially the grant application, the Final Descriptive Report and the Financial Status Report.

Relationships among variables were examined using the chi-square statistic, which is a measure of the degree of association between one variable and another. It is used to indicate both the probable interconnection between two variables and also the direction of that relationship. For example, chi-square might produce a finding which demonstrates that the higher the entrance fee for a competition, the higher the prize value was also likely to be.

Analysis and Findings

The conclusions and recommendations drawn from this study represent both the statistical findings drawn from the analyses and qualitative information generated by the intensive review of grant files, and interviews both with Design Arts Program personnel and with grantees.

The principle findings are presented in a brief form in the following pages. The analysis has, obviously, not been as completely elucidated in this executive summary as in the final report and readers are directed to that document for further description and definition.

The evaluation found that the grantees are at an early stage of management development when the application is submitted. The basic ideas of what and how to implement a design competition are usually presented as a brief sketch. The shift from a sketch to a more fully detailed implementation plan occurs once the grant has actually been awarded and is a continual process throughout that grant period.

It appears that the professional advisor may be the most important factor in the development of such a management plan. The advisor is usually asked to participate after the award of the grant and is also the only external factor affecting the day to day operations of the competition. Since the plan developed before the advisor's presence is incomplete, the relative ease of

implementation would appear to derive from the advisor's expertise. While the management styles of the various advisors varied widely, it was the presence of that type of technical knowledge which offset the grantees' inexperience.

While the Endowment was almost always the largest single financial contributor to a grantee, the grantees themselves were also major contributors. Evidence of commitments for at least 50 percent of the overall cost of the competition from sources other than the Endowment was frequently provided in the application. This demonstrates both the grantees' willingness to support an innovative procedure to produce an acceptable design and that the lack of pre-grant planning for the competition was more probably a function of the grantees' lack of information about the specific procedures involved in the design competition process. It seems clear that the funding mechanisms for a more traditional building project are already well developed.

Most of the problems which arose among the various management activities stemmed from the relative inexperience of the grantees with the design competition process. A particular example was the schedule, which was chronically under-estimated in terms of how long each of the specific tasks might take. An amended schedule (presumably by the professional advisor) was usually developed during the actual implementation.

Another aspect of the competition planning process which caused problems for many grantees was the development of the architectural criteria necessary to meet the requirements of the grantees and of the site allocated. This type of information was the source of the only competition problem severe enough to warrant cancelling the entire process and starting all over again.

Related to the problems of scheduling and the lack of architectural expertise is the persistent underbudgeting, which is related to a certain degree of inexperience with the competition process. It also demonstrates, however, the fund-raising capabilities of the grantees, who were able to obtain additional funds as required to offset any possible shortfall.

The strongest variables in assessing the competition process were the value of the prize and the type of competition. In essence, the greater the prize, the

higher the number of entrants and the more they are willing to pay for the privilege of competing. The structure of the competition (that is, one- or two-stage, et al.) is apparently less important than the type of compensation, which is closely linked with the type of competition. In other words, a commission is more likely to be part of a project than either a plan or an idea competition.

In most cases the description of the publicity variables proved disappointing. The lack of reporting, together with the lack of planning, indicates that this is not used effectively. This is somewhat peculiar in light of the grantees' demonstrated fund-raising abilities.

Principle recommendations derived from the study were directed towards data recording procedures and potential areas for further research. All of the grantees filled out an application, which provided the primary source of pre-grant data. In the interests of comparability and to offset inconsistencies found among grantee Final Descriptive Reports, it may be useful to require grantees to complete another application form at the end of the grant period in lieu of, or in addition to, the Final Descriptive Reports.

Additional possibilities for future research can be found in the relative composition of the jury, in the perceived efficacy of various management strategies, and in developing procedural manuals in overall competition management, mailed to the grantees with the original application form.

The complete evaluation report presents detailed information on the structure of the evaluation, the study population, the data and analytical procedures employed, and the study findings and recommendations.

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I. INTRODUCTION

A. PURPOSE

The evaluation report is the result of a test of the evaluation design developed by Evaluation Technologies Incorporated (ETI) for the Design Arts Program under a previous contract with the National Endowment for the Arts (The Design Arts Program, The Design Competition Subcategory: A Goal-Based Evaluation Design; April 24, 1984).

The purpose of this evaluation report is fourfold: (1) to document the test of the evaluation design; (2) to document the data base that was developed during the data collection phase of the evaluation process; (3) to present analytical findings; and (4) to provide recommendations to the Design Arts Program regarding refinements of the evaluation design, the maintenance of the automated data base of NEA design competitions, and of grantee reporting requirements.

B. THE EVALUATION CONTEXT

The Design Arts Program of the National Endowment for the Arts seeks to nurture and support excellence in the design fields of architecture, landscape architecture, urban design and planning, interior design, industrial design, graphic design, and fashion design. It does so in two ways: (1) by providing grant support to organizations and individuals, and (2) through its Design Excellence Project, by encouraging both citizens and government to recognize the important role played by good design in "making our environment more beautiful, more efficient and less costly."¹ The strategy of the Design Arts Program in all of its activities is to provide leadership in the field by assisting innovative design projects and projects which can serve as examples of models for the country generally.

¹/ National Endowment for the Arts, Design Arts Program. "Application Guidelines Fiscal Year 1983," p. 1.

In its grant-making activities, the Design Arts Program funds projects in the generic categories of (1) Demonstration, (2) Communication, and (3) Exploration/Research. These categories allow the Program to focus on the broadest range of design areas/topics and yet also to assist projects that might serve as models and/or that treat design issues which might be identified, from time to time, as meriting priority attention. Each of the generic grant categories has its own goals and objectives and specific subcategories which address one or more of the category goals.

This evaluation focused on the Design Competition subcategory of the Design Demonstration category. This category has three major goals:

- o To support outstanding design and planning projects that may serve as models for the field;
- o To support projects that stimulate the field and encourage innovative ideas and activities in areas of special concern;
- o To support projects that encourage competitive processes for selecting outstanding designs and design professionals.

The Design Competition subcategory contributes in general to the achievement of the first two goals, but is directed specifically toward the achievement of the third goal. The Design Competition subcategory supports design competitions which:

- o Offer opportunities to new and/or excellent designers;
- o Produce new solutions to design problems;
- o Address issues of national or regional concern;
- o Have a high likelihood of being carried out;
- o Enable the public to become aware of, and take part in, the design process.

C. THE EVALUATION DESIGN

The evaluation design is based upon the assumption that the management and administrative rules and procedures of a design competition have significant bearing on its likelihood of being carried out and its ability to arouse public awareness of, and involvement in, the design process.

The evaluation objective is defined in this way:

To what extent does the Design Arts Program meet its objectives of funding competitions that have a high likelihood of being carried out and that enable the public to become aware of, and participate in, the design process?

The first part of this objective addresses the project administration process. The underlying assumption is that "high likelihood" is a function of the competition rules and procedures. The set of questions developed for this objective refer to budget and management issues, using these as proxies for the ability to implement any given project. This set of questions is designed to describe any patterns or conditions that impede or enhance a design competition by focusing on fiscal responsibility and management practices, and highlighting areas in which NEA assistance might be the most useful. The questions thus seek to determine the nature of the planning, the administrative procedures, and resources available to the competition; to compare what was planned and what actually took place; and to ascertain any relationships between various of these elements and the projects themselves.

The second part of this objective addresses publicity. The hypothesis underlying the second part of the evaluation objective is that the greater the effort and resources expended on publicizing the design competition project, the greater the public awareness is likely to be. Questions are posed to examine numbers of people affected by a publicity technique and the effectiveness of the methods.

Two boundary conditions define the evaluation design:

- o It is assumed that the evaluation design will be most useful to the Design Arts Program if it is easy to implement. Thus, existing

and readily available data sources are used, such as the grantee files. These data sources are supplemented with interviews with personnel involved in the competitions.

- o The evaluation design focuses on the design competition process and sets forth the relationship of various elements of that process to the specific goals being assessed. The design does not focus on outcomes of either that process or the results of the competition (e.g., construction of the winning design).

The evaluation examines each project funded since 1982 under the Design Competition subcategory. The examination provides the framework for drawing general conclusions about the management and related aspects of the design competition process. The implementation of this design results in three principal products:

- o An assessment of the type of management and related practices employed by each grantee;
- o An analysis of the extent to which various practices of the grantee population are related to other practices; and
- o Indications of the extent to which various practices are related to outcomes of the design competition.

The first analysis describes and categorizes the management practices of each grantee; the second and third analyses facilitate generalizations about design competitions by providing information as to which variables or combinations of variables seem critical to success.

The evaluation design arrays data by grantee for each question, then aggregates the data for all grantees by indicator to allow generalizations about the grantees as a group. This is done to ascertain patterns of characteristics and to determine significant relationships among indicators. Comparisons were made between planned and actual events for individual grantees and in the aggregate.

Because of the formative purpose of the evaluation,² the design is non-experimental. No control group is used to provide comparative data and analysis is restricted to the grantee population itself. Within that population, however, the design provides for data comparison at two points -- pre-grant and post-grant. This comparison allows the evaluator to control, to some extent, for planning or implementing aberrations that would distort the general picture.

The data establish a baseline for the Design Arts Program against which to measure subsequent activities, and to analyze it so that program modifications can be made as needed. However, which hypotheses are tested and which variables are looked at in conjunction with which other variables is determined by several arbitrary assumptions that evolve with the examination of the data. Thus, for example, the analysis establishes ranges for certain indicators (e.g., value of award) which provide an internal frame of reference for assessing grantees. Rather than using the individual amount for the value of award, for example, which would have resulted in approximately 32 distinct amounts, these amounts were inductively grouped together as high, medium, or low. This was done to facilitate statistical analyses.

D. THE GRANTEE POPULATION

The original scope of the design included the analysis of all competition grantees funded by the subcategory. Access to data available reduced the scope to those competitions funded from 1979, and this was further reduced, during the actual evaluation process, to those competitions funded from 1982. Limitations of the data were the principal constraint: the application form changed significantly as to the types of information required, and most of the organizations sponsoring competitions had either dispersed or had changed personnel so extensively as to make requests for missing pieces of information largely futile.

^{2/} A formative evaluation is designed to provide data to program managers that will allow them to adjust the program as necessary; it does not, however, provide data concerning the overall impact of the program.

As a result of this winnowing process, there were 32 grantees for the total population, including 8 charrettes and 24 competitions (See Figure 1). Because of the radically different nature of charrettes, which rendered many of the management variables inapplicable, they were analyzed separately to reinforce their innovative and unique properties, and to avoid penalizing them for nonconformity to competition-specific standards.

E. METHODOLOGY CAVEATS

There are two principal caveats connected with the statistical analysis of this data. The first concerns the data and the second, the use of the statistic chi-square.

Initially, the grantees are required to submit a detailed grant application, clearly listing the various budgetary allocations for salaries, supplies, travel, permanent equipment, fees, publicity, and prizes. They are also required to submit a wide range of other information, including the projected number of beneficiaries, descriptions of the management of the competition, and a statement of why the funding is requested. There are no such requirements for the Final Descriptive Report (FDR), and the Financial Status Reports (FSR) do not provide details on the various components of the budget. The evaluation design used was based upon the grant application form, which resulted in the definition of several variables under the general heading of "Budget." Post-grant data was difficult to identify due to the fact that specific variables such as "Fees & Other," "Publicity," and "Prizes" are frequently combined under the "Other" category on the FSR. While it is possible to determine the amount spent on prizes from an examination of the grantee's printed materials, it was only possible to determine the publicity actually spent (after the grant had been awarded) in eight cases. All grantees were telephoned to collect this information. In some cases, the organizing entities no longer existed and, in others, personnel had changed drastically or no figures had been kept. In several instances, the amount spent on publicity was zero, because the advisor or the advisory board had found in-kind donations of materials or space in various media. As the evaluation design was set up as a comparative study, the absence of some data left gaps in that comparison.

CHARRETTE

- 1982:- Association of Collegiate
Schools of Architecture
Skowhegan School of Painting
and Sculpture
Thibodaux Friends of the
Library
Triton Museum of Art
- 1983: Institute for Urban Design
Pilobolus, Inc.
University of California/
Santa Barbara
- 1984: St. Paul, Minnesota/Dept. of
Planning & Economic Develop-
ment

COMPETITION

- 1982: Milwaukee County War Memorial, Inc.
San Francisco Friends of the Urban
Forest
- 1983: Boston Redevelopment Authority
Chandler, Arizona
Jacob's Pillow Dance Festival
Minneapolis Society of Fine Arts/
Minneapolis College of Art
New Orleans Museum of Art
Newport News, Virginia
The Townscape Institute
University of California/Berkeley
- 1984: Arizona State University
Association of Student Chapters of AIA
Escondido, California
Hillside Trust
Irwin Sweeny Miller Foundation
Municipal Arts Society of New York
National Association of Housing
and Redevelopment Officials
Roger Williams College
University of Florida
Virginia Polytechnic Institute and
State University
- 1985: Alabama School of Fine Arts Foundation
Arizona Historical Society
Oberlin College
St. Paul, Minnesota

Figure 1. Design Competition Evaluation Population

Much of the information relating to publicity was sparse. It was assumed that numbers of viewers or attendees would be available, that fairly detailed plans would be made to involve the public in the competitions, and that percentages of the number of catalogues sold in relation to the number printed would be available. These assumptions were false for almost every competition analyzed, although it is not to be inferred that these data were not present during the competition. This information was, however, unavailable to the Endowment and the evaluators.

What the preceding discussion demonstrates is that the Endowment receives the information it requests, and that this information was not completely appropriate to a comparative study. These circumstances reveal more about the data, and Endowment's reporting requirements, than about what actually occurred at the design competition. The attention paid by grantees to publicity was probably not as sporadic as the data collected would suggest. Revised reporting requirements on the part of the Endowment would greatly enhance the confidence with which one could address such issues as the effect that publicity has upon the attendance at, or interest in, a design competition.

As a result of the limitations of the data, several of the planned evaluation questions were not answered. These are indicated in the following section, "Findings."

F. DATA COLLECTION PROCEDURES

Data for this study were collected primarily from the grant files in the Design Arts Program. Additional information was provided by the Final Descriptive Reports and phone conversations with individual grantees. Materials provided as part of the grant application were considered to be "pre-grant", and all other information was considered to be "post-grant." The amount and type of information provided in the application varied around a constant: all applicants were required to complete the Endowment grant application form. Additional, descriptive, information was provided at the discretion of the applicant, and reflected the degree to which the competition was organized at the time of the application: such organization was rarely finalized at that time. The post-grant reporting requirements consist of the FDR and FSR,

and the provision of materials developed as a result of the grant (including posters, brochures, catalogues, etc.). Most of the FDRs followed a brief narrative format, and summarize overall results of the competition. Since there are no explicit reporting requirements, they omit managerial and budgetary information. The FSRs are required to show only the project expenditures in relation to the amount of the grant, not the specific sums disbursed against the proposed budget line items.

Phone calls were made by Design Arts personnel to determine budgetary data which could be extrapolated from available documentation. While this provided some further information, the Endowment should establish specific reporting requirements if a more detailed monitoring of funds is desired. One recommendation is that grantees complete a second application form at the end of the competition, which would serve two purposes. First, it would provide the Endowment with comparable information on all its grantees and, second, it would provide the grantees with a familiar form that they could then use to compare their plan with its subsequent implementation.

G. DATA ANALYSIS PROCEDURES

The data analysis plan called for the development of a data recording sheet, computer entry, statistical tests and analysis of quantitative and qualitative variables to determine grantee-specific and general patterns and procedures.

The data recording sheet was developed to provide a coherent method of collecting, maintaining, updating, and eventually entering on the computer information from the grantee files and from interviews with Endowment staff and grantee personnel. The data recording sheet was developed through a meticulous examination of the evaluation design, and resulted in a series of 30 variables, broken out in many cases into specificities. For example "Budgetary Items" is composed of salaries, supplies, et al. These variables were presented in a columnar form: variable name, pre-grant data, post-grant data and statistical method to be employed. These sheets were then completed by ETI and NEA personnel and entered onto the IBM PC using the software

package STATPAK. For most of the analyses, frequencies were run, as well as two by two tables for determining the relationship between pre- and post-grant data. In addition, specific analyses detailed in the evaluation design were performed.

The evaluation design objective examines which of the projects funded by the NEA have a high likelihood of being carried out and which enable the public to become aware of/participate in the design process.

This objective can be addressed before any analysis is undertaken. First, all competitions funded by Design Arts were carried out. "High likelihood of being carried out," therefore, was no longer a valid measure to determine the efficiency and effectiveness of the management practices used by the grantees. However, the documentation of a wide range of those practices, both planned and actual, still existed, as did analyses of their relationships and patterns. The analysis of those practices, relationships and patterns was performed as the logical extension of the evaluation objective. A preliminary review of the second part of the objective (the methods used by the projects which enable the public to become aware of/participate in the design process) led to another modification of the design. The variables designed to address the second part of the objective were examined and compared with the material actually present in the grant files. These variables had been developed for an analysis of extremely detailed statistics, which were found only rarely in the grant materials. Instead, information relating to publicity was presented in brief descriptions of what kinds of publicity were used and often included exemplars. As a result, the public awareness of/participation in the design process could only be inferred, not objectively analyzed. The numbers and types of publicity methods were used as proxies to determine the relative importance of publicity and the likelihood of public awareness in the design competition project. Where the data would allow, these measures were verified by determining the actual percentage of publicity as a proportion of the total project budget.

Data was analyzed by frequencies and through the use of cross-tabs, examining the relationships between major variables. Their significance was reassessed

using chi-square to the .05 level of significance. In effect, this statistic provides assurance that observed results greater than the expressed value for chi-square at those degrees of freedom are derived from a 95 percent probability of an actual relationship, rather than from random chance.

Chi-square is a statistic used to measure the degree of association between two or more variables. In order for chi-square to be treated as a valid and reliable indicator, each square of the box (presented below) must contain at least five cases. There were only eight charrettes: obviously a total of twenty cases is beyond this specific population. In these instances, chi-square can be used to demonstrate tendencies, but not actual relationships.

	Variable Y	
Variable X	A	B
	C	D

Significance in relationships is tested with two-by-two tables through the development of two hypotheses. The first of these states that the two variables being examined are related, and the second, that they are not. If the expressed value for chi-square is greater than the table value for those degrees of freedom, then the first hypothesis is considered valid and the second disproven. This situation is reversed when the expressed value for chi-square is less than the tabular one.

An example of this type of relationship would be a hypothesis that the greater the prize, the more likely the competition was to have more entrants, and that this relationship would be a direct correlation (higher prize value leads to greater number of entrants: both figures increase).

To a certain extent, the probability that two variables are related can also be expressed through the proportionality of the expressed to the stated values of chi-square: the closer that proportion approaches the value of one, the greater the likelihood that a relationship exists.

H. CONCLUSIONS AND RECOMMENDATIONS

Conclusions derived from the findings are based upon both the statistical analyses and qualitative information obtained by reviewing the grantee files, and interviewing grantees and NEA personnel. These conclusions, and subsequent recommendations, are intended to provide the Endowment with three major products. First, the Endowment will have a computerized system for monitoring the progress of its grantees (in terms of the comparability of their response to stated questions). Second, the Endowment will have descriptions of competition grantees from 1982 in terms of their efficacy in implementing their plans. Finally, the Endowment will have a statistical description of the types of competitions and information requirements which presently appear inter-related, and those that have no connection. As a result, the Endowment will be able to provide continuing expert assistance to grantees based not only on extensive personal knowledge of the competition process, but also on statistical evidence. This will reinforce the Endowment's recommendations to ongoing competitions on management and their judgments as to probable degree of success of the competition applicant.

II. ANALYSIS OF FINDINGS

A. INTRODUCTION

Evaluation data was collected on each Design Arts Program competition grantee from 1982 to 1985. Grantee-specific findings are provided in Appendix A. Aggregated analytical statistics for each variable related to competition management and publicity at particular levels of significance are provided in Appendix B. Dominant patterns in the planning and implementation of competitions and charrettes are presented and analyzed in this chapter. The purpose of this chapter is to provide an overview of the major findings and relationships among the variables examined in the evaluation research effort.

The thirty-two grantees studied were divided into two groups: competitions and charrettes. This was done when it became apparent that charrettes were sufficiently different from "regular" competitions to recommend their separate treatment.

B. EVALUATION OBJECTIVE

The primary objective of this study was to answer the question: To what extent is the Design Arts Program meeting its objectives of funding competitions that have a high likelihood of being carried out, and that enable the public to become aware of and participate in the design process?

As stated earlier, all of the funded design competitions had been carried out, so that 'high likelihood' was rather a moot point. It was not to be discarded, however, as the possible hypotheses to account for the causes of such an astounding implementation ratio were still of considerable interest. All of the funded design competitions were carried out, even one where the problems experienced were sufficiently severe to warrant starting all over again from scratch. The hypotheses related to implementation are linked to individual variables, or groups of variables, which are provided in Table 1. Briefly

put, the hypotheses state that, since all of the design competitions were implemented, characteristics in common affect implementation, and that certain characteristics have a stronger effect than others.

An examination of the types and characteristics of competitions was therefore useful in determining the management patterns, practices and problems encountered. This description could then be used to provide guidance to grantees and competition advisors as to past management efforts and results. As design competitions are still relatively new in this country, a sense of the types of management efforts which have been undertaken in the past would be of some service to others considering their use.

All grantees were analyzed across several variables. While these changed for charrettes, they did so primarily through deletion. These variables and their application are presented in the following matrix (Table 1).

C. DESIGN COMPETITION MANAGEMENT

1. Management Practices

Most (81%) of the 32 competition and charrette sponsors submitted grant applications to the Endowment prior to the completion of a full implementation plan. The importance of the plan is highlighted by fact that the evaluation revealed significant differences between planned and actual implementation practices.

The evaluation results suggest that the introduction of a professional advisor is the single most important factor in a successfully planned competition. Ninety percent (90%) of the competitions and charrettes employed a professional advisor, who appears to be the only external source of expertise that directly affected the performance of the grantee. Examples of the impact of the professional advisor include the following:

- o The number of grantees who developed project performance schedules increased by 20% from planned to actual.

VARIABLE	COMPETITION	CHARRETTE
1. Management	X	X
2. Funding	X	X
3. Budgetary Items	X	X
4. Income	X	X
5. Other Assurances	X	X
6. Types of Competition	X	X
7. Amount of Registration Fee	X	
8. Value of Registration Fee	X	
9. Type of Incentive	X	X
10. Amount of 1st Place Award	X	X
11. Value of 1st Place Award	X	X
12. Total Amount of Awards	X	X
13. Total Value of Awards	X	X
14. Number of Prizes	X	X
15. Number of Entrants/Registrants	X	X
16. Publicity for Competition	X	X
17. Publicity of Results	X	X
18. Plans	X	X
19. Publicity Percentage	X	X
20. Number of Viewers	X	
21. Number of Attendees		X
22. Types of Publicity	X	X
23. Catalogue Sales	X	X
24. Community Support	X	X
25. Total Competition Cost	X	X
26. Total Competition Value	X	X
27. Plan to Build	X	X
28. Competition Held	X	X
29. Grant Type	X	X
30. Purpose of Grant	X	X

Table 1. Evaluation Variables

- o Twice as many grantees held question periods than had planned to do so.
- o Publicity expenditures decreased due to the use of the professional advisor's network of contacts.
- o While only ten competitions had planned to establish procedural rules, 23 eventually did so; while only one charrette planned for procedural rules, four (50%) actually employed them.

Evaluation data indicate that, in general, grantees employed more management constraints than they had recognized the need for in their applications. This raises the question of whether particular management procedures were identified and employed as they became necessary, rather than as part of a pre-established management plan; or whether this reflects the influence of the professional advisor as a principal catalyst to planning.

Evaluation research focused on the presence or absence of a professional advisor, schedule, testing of project program, question period, procedural rules, and problems encountered.

The variable "Testing of project program" was used primarily in the planning stages of a competition, while "Problems encountered" focused on those situations that occurred subsequent to Endowment funding. Only three of the competitions and charrettes tested their project program.

Two-thirds of the competitions used all of the following management activities: professional advisor, schedule, question period, and procedural rules, while 90 percent of the competitions used some combination of those activities. Good competition management was therefore operationally defined as one which demonstrated all four of these variables. While 79 percent of the competition grantees planned to develop performance schedules, all twenty-four actually did so. However, these schedules were only followed (plus or minus one week) in three cases, as the time necessary for planning and implementing was

consistently underestimated. Schedules for charrettes usually consisted of setting aside several days in which to hold the event, and were therefore much less detailed than those for competitions.

Although none of the grantees anticipated or planned for problems in their application, about 42 percent of the competitions and 25 percent of the charrettes did experience some management problems. The greater number of competitions experiencing difficulties can be attributed to the size of that population and the relative complexity of that process.

The most common problem encountered was the entrant's interpretation of the procedural rules. In some cases there was considerable confusion over the site plan, in one, an architect threatened legal action. In an extreme case, a resident artist chose to express disapproval of the competition process by working on a large metal sculpture during the charrette. In several cases, there were substitutions of management personnel or of the value of first prize. In only one case were the difficulties sufficiently insurmountable as to require returning all the entries and reinitiating the competition process. The problem in this case was based on extremely detailed specifications for the design (which all of the entrants violated at one point or another), and the jury's consensus that the plans submitted did not meet the functional and esthetic needs of the building. Because the original design specifications were so detailed, the jury recommended that they be reshaped to provide specifications which would be detailed enough to give the entrants the basic idea of what was required, but not so specific as to limit the design possibilities. In addition, the jury recommended that the budget for building be increased by \$200,000 to further enhance the design possibilities. The entrants who had previously submitted designs were given four weeks to modify their entries based on the new parameters.

The evaluation design also sought to identify other assurances or indicators that the grantee was committed to holding the competition and meeting all its obligations. The most common indicator for competitions and charrettes was the provision of land required on which to build the winning entry. This varied from allocation of land already held by an existing structure (especially in the case of additions to that structure) or the donation

(usually by the city) of a separate plot of land. Another assurance was the guarantee of the availability of certain financial resources, such as the expressed intent to use a certain amount of the city budget or of a memorial fund for construction purposes.

Design competition projects are, on the whole, underbudgeted. However, in almost every case where additional monies were required, the project sponsor was able to raise the necessary supplemental funds. This is demonstrated by the differences between planned and actual budgets, which in 63 percent of the cases reported increases in monetary contributions. There was no indication as to whether these additional sums were provided by the grantee or by contributions from other sources.

Table 2 presents the frequency distributions and percentages for each management-related variable examined, upon which data the analyses highlighted in this section were based.

2. Funding

The Design Arts grant application form identifies five potential sources of project funds:

- o Monetary contributions
- o In-kind contributions
- o Other grants
- o Federal grants
- o Other revenues

While all of the grantees obviously had requested and received Federal grants, the combination of other funding sources varied greatly. A grantee could receive funding from all five sources, or from only one source other than Federal grants. Table 3 shows the frequency with which each of the five sources was used.

COMPETITION

	<u>Planned</u>		<u>Actual</u>	
	No.	Pct.	No.	Pct.
PROFESSIONAL ADVISOR	21	87.5%	22	91.6%
SCHEDULE	19	79.2%	24	100.0%
TESTING PROJECT PROGRAM	3	12.5%	0	0.0%
QUESTION PERIOD	8	33.3%	17	70.8%
PROCEDURAL RULES	10	41.7%	23	95.8%
PROBLEMS	0	0.0%	10	41.7%

TOTAL = 24

CHARRETTE

	<u>Planned</u>		<u>Actual</u>	
	No.	Pct.	No.	Pct.
PROFESSIONAL ADVISOR	3	37.5%	7	87.5%
SCHEDULE	5	62.5%	7	87.5%
TESTING PROJECT PROGRAM	0	0.0%	0	0.0%
QUESTION PERIOD	1	12.5%	2	25.0%
PROCEDURAL RULES	1	12.5%	4	50.0%
PROBLEMS	0	0.0%	2	25.0%

TOTAL = 8

Table 2. Competition Management Activity Data Tables

Table 3. Frequency of Types of Funding for Competitions

	Planned	Actual
Monetary	24	23
In-Kind	15	8
Other Grants	8	8
Federal Grants	24	24
Other Revenues	15	15

Monetary contributions and Federal grants were the most common source of funding. In-kind contributions and other grants were the most infrequent sources. The frequencies presented on the preceding table are fairly consistent from planned to actual. These varied primarily with a shift from in-kind contributions to monetary, increasing the dollar amount for that variable.

The Endowment frequently represented the single largest contributor of project funds. However, various other funding sources accounted for at least 50 percent of the total cost of the project. These figures reveal considerable change in the percentage of total project funds secured in addition to the Endowment contribution. Initially, all grantees expected to fund between 40 and 80 percent of the project with non-Endowment funds; in actuality, grantees secured from 20 to 90 percent of project funds. The non-Endowment percentage of funding varied widely, which demonstrates two processes. The first of these relates to the variability between planned and actual figures. The Endowment often awards less than the amount requested, while the grantee may have reported an optimistic assessment of their actual financial situation. This leads to the second process, which is by far the most dynamic. The grantee population consists of three major types of organizations: (1) city governments; (2) civic or service organizations; and (3) universities. All of these must, by their natures, be proficient in fund-raising, and most developed the additional resources necessary to supplement the Endowment reductions. This fundraising is demonstrated by the fact that the average total amount funded varied by only two percent from planned to actual. That process is never described: however, it would be interesting to examine it more closely.

The distribution of the planned and actual funding percentages is presented in Table 4.

Table 4. Frequency of Percentage Funded by Non-Federal Sources

Range (Pct.)	No. Planned	No. Actual
0-10	0	0
10-20	0	0
20-30	0	2
30-40	0	1
40-50	7	4
50-60	4	8
60-70	7	7
70-80	4	1
80-90	0	1
90-100	0	0

Charrettes also relied upon monetary contributions and Federal grants as the most common sources of funding (Table 5). "Other Revenues" was the least frequent source of funding: this is because the variable was primarily dependent upon the collection (and utilization) of entry fees, which almost none of the charrettes did. The most striking change in category occurred for "In-Kind Contributions," which decreased from six cases to one. Four of those six shifted the amount to increase the total amount for the monetary category, and one did not use that source of funding after all. The percent of funding acquired from non-Federal sources by charrettes did not vary greatly: the ranges were identical, and the means varied by only five percent. This implies that the levels of funding of charrettes were much more stable than those of competitions and may be due to the lower total cost of a charrette in relation to that of a competition. The goal of an overall lower level of funding was more attainable than that of a higher one and thus required less additional effort from the grantee.

Table 5. Frequency of Types of Funding for Charrettes

	Planned	Actual
Monetary	6	7
In-Kind	6	1
Other Grants	6	5
Federal Grants	8	8
Other Revenues	2	2

Every grantee, both charrette and competition, provided documentation on financial support, and a budget in its plan. All grantees except four honored the commitments made. In two cases, the results are not yet in from the competition/charrette, so that determination could not be made. However, in two of the 32 cases, problems did develop that resulted in commitments not being honored. In one case, the architect who won the competition was not remunerated as agreed. In the other case, the professional advisor was not paid as agreed. Both of these situations have since been resolved.

Budgetary categories examined included:

- o Salaries, wages and fringes
- o Supplies and materials
- o Travel
- o Permanent equipment
- o Fees and other
- o Publicity
- o Prizes/awards.

Each of these categories was evaluated in two ways: (1) by detecting its presence/absence (with the intent to discern particular patterns which occurred as well as simple frequencies of each variable), and (2) by identifying cases where the actual expenditures deviated from the planned amounts by at least ten percent.

One of the principal data collection difficulties surfaced with these analyses due, primarily, to the inconsistency of the grantee reporting requirements and formats. For example, budget information on the application form distinguishes between fees and other, publicity, and prizes/awards. The FSR, however, combines these three categories under the heading "Fees and other." While the amount allocated for prizes could be abstracted from descriptive reports provided by the grantees, publicity expenditures could only be identified for one quarter of the 32 cases, despite extensive efforts to retrieve that data through personal telephone inquiries.

Deviances between planned and actual budgets of more than ten percent were used as indicators of problem areas. This was found for the total budgets of the competitions in seven of the twenty-four cases. Most of these were budgeted for less than the actual cost of the competition.

Budget figures for each category except supplies and materials, permanent equipment, and publicity were available for more than 90 percent of the competitions. Salaries, wages, and fringes were often planned, and sometimes realized, as part of the in-kind contribution, since the staff time allocated to prepare for the competition was already a part of the grantee budget. In some instances, it seems likely that this consideration was used to augment the percentage of funding contributed by the grantee. Supplies and materials decreased 69 percent of the time from the planned to the actual figures. This decrease may represent the presence of additional donations not explicitly listed or the decision to shift funds to another category. This latter possibility could occur if the grantee defined the cost of the paper or drafting supplies necessary for the competition as supplies and materials. These supplies might then be provided from the grantee's own stock, with the amount allocated being used for another purpose.

Publicity and Fees and Other were the two categories where the grantees experienced the greatest deviation. Other categories that frequently deviated from planned budgets were Supplies and Materials, which tended to decrease, and Prizes/Awards, which tended to exceed the planned budget.

The increase in the amount budgeted for prizes and awards may be a result of an increase in the number of prizes, as well as the identification of a value for the first place award, which was missing in many of the applications.

Permanent equipment was budgeted for only one competition. In most cases, it seems reasonable to assume that any office or artistic equipment necessary to plan/implement the competition was already owned by the grantee.

Charrettes were more likely to conform to their total budgets, and variations which did occur stemmed primarily from discrepancies concerning the costs of publicity. This may again be due to the attainability of their lesser budgeted costs.

3. Budget and Cost

Despite the fact that the range of the total cost for competitions varied considerably (planned was \$285,000, while actual was \$425,000), the means of each were within \$7,000 of each other, and fell in the \$70,000-\$150,000 range. Total cost of the competition was the most unstable variable; it changed in almost 50 percent of the cases. Changes were divided equally, however, between increases and decreases in overall amounts, as shown on Table 6.

Table 6. Planned and Actual Total Costs of Competitions

	Planned		Actual	
	No.	Pct.	No.	Pct.
Less than \$70,000	9	38%	8	33%
\$70,000 - \$150,000	8	33%	10	42%
Greater than \$150,000	7	29%	6	25%

Planned versus actual total costs (both ranges and means) of charrettes also varied greatly from planned to actual, decreasing by at least 30 percent. This finding is interesting as three-fourths of the charrettes altered this variable. One half of the charrettes (50%) fell into the \$31,000-\$60,000 range,

with three of the remaining four costing more than \$60,000. Charrettes tended to cost as much as the least expensive competition. While the total cost of a charrette changed from planned to actual, and deviated by more than 10%, the net levels of increases and decreases to the amounts budgeted did not affect the overall distribution in their funding levels. The reason for the decreases in range and mean can be attributed in part to the budget for the Skowhegan School, which decreased by 500 percent.

Table 7. Planned and Actual Total Costs of Charrettes

	Planned		Actual	
	No.	Pct.	No.	Pct.
Less than \$30,000	1	13%	1	13%
\$30,000 - \$60,000	4	50%	4	50%
Greater than \$60,000	3	38%	3	38%

D. DESIGN COMPETITION IMPLEMENTATION

1. Typology

Competition typology was examined through the use of two variables: structure and area of design concern. It was hypothesized that the type of competition planned and/or carried out would be a principal determinant in the overall response to the competition.

a. Structure

Five structural types of design competitions are funded by the Endowment:

- o Open one-stage
- o Open two-stage
- o Restricted
- o Restricted on-site charrette
- o Invited.

Over forty percent of the 32 grantees conducted open one-stage competitions. Open two-stage competitions and charrettes each accounted for 25 percent.

The statistics indicate that a significant relationship exists between the planned structure and the value of first prize. This is intriguing because even though the organization of the competition is linked with the amount of the prize, this relationship does not also exist for the actual structure of the competition, despite the stability of the planned to actual correspondence. This finding indicates that the first prize value may have changed. The "Value of First Place Award" variable will be discussed in the Incentives section of this report, but the primary reason that significance no longer existed can be traced to the increase in reported values for that variable, especially for the highest category.

Approaching significance were the relationships between actual structure and the number of entrants and ranked fee. This echoes a hypothesis which formed part of the evaluation plan: that the number of entrants might be linked to the type of competition and the amount of the entry fee. In effect, the fact that these two variables produced values approaching significance together with the actual structure of the competition, suggests that there are linkages which could be deliberately strengthened or weakened through particular management strategies. Open one-stage competitions with mid-level fees attracted the greatest number of entrants, who were usually attracted by the value of prizes offered or, perhaps, by an intangible such as the prestige of the grantee. The grantee management can therefore direct the type and number of entrants by choosing a different structure (for example, restricted or invited competitions strictly limit who competes, while an open two-stage competition allows a broader range of participants, but maintains a great deal of control at the second stage over which designs are actually considered) and fee requirements.

b. Area of Design Concern

The area of design concern determined the overall purpose of the competition, and was analyzed through three variables: idea, plan, and project. An idea competition was one in which any type of solution to a problem or a situation

was acceptable. A plan competition called for an actual architectural rendering of a building or landscape solution but was not intended to be constructed. A project competition, on the other hand, required the development of an architectural plan and was intended to serve as the blueprint for subsequent construction or renovation.

Project competitions accounted for over seventy percent of the competitions, followed by plan competitions. Idea competitions were rare. Only two competitions changed their area of design concern. Significance was determined for planned by actual area of design concern, and for planned area by total value of awards. The first case is due to the stability of this variable, and the second is linked to the preponderance of projects as an area of design concern. The fact that this relationship did not continue through implementation, is caused by the effects of changes in the value of the first place award, which was included in the total value of awards.

Table 8. Competition Area of Design Concerns

	Planned		Actual	
	No.	Pct.	No.	Pct.
Idea	2	8%	1	4%
Plan	5	21%	6	25%
Project	15	63%	17	71%
Missing	2	8%	----	

Analysis of planned area by total value of awards is revealing. This relationship did not continue through the actual area of design concern, which indicates that the planned and actual total value of the competitions vary markedly, as will be discussed in the next section of this report. The planned value for the total awards was distinctly lower than the one realized. This variable is also biased, as almost three out of every four cases were directed towards projects. This in turn reflects the purpose of the competitions: they were intended to provide an architect for a specific function, and not for the interest and excitement of the competition alone.

Planned and actual area of design concern both approach significance with regard to the number of entrants: projects tend to attract higher numbers than other areas of design concern. This is probably related both to the end product and to the reward. Not only is the monetary value of the prize greater, but there are also intangible awards which accompany the cash prize. These derive primarily from two sources: the first is the sense of winning something concrete (the chance to design and build something), and the second is the prestige of having designed something which can be seen and evaluated by both one's peers and the public.

Charrettes are fairly evenly divided between plans and projects. Only one charrette changed its area of design concern: from idea to plan. This reinforces the stability of this variable, and reflects the practical concerns of limiting the design teams to creating something that can be judged comparatively. An idea charrette would be extremely difficult to implement, let alone evaluate.

Table 9. Charrette Area of Design Concerns

	Planned		Actual	
	No.	Pct.	No.	Pct.
Idea	1	13%	0	
Plan	3	38%	4	50%
Project	4	50%	4	50%

Actual area of design concern by number of entrants reinforces the theory that projects tend to attract more entrants. The fact that this relationship still emerges as approaching significance for a variable as strictly limited as the number of entrants at a charrette, indicates that the area of design concern may be of more importance than others in attracting entrants.

This attraction may also be due to the value of the first prize, which is the second variable approaching significance. As many charrettes have only the single cash award, this figure becomes more important for these competitions than for competitions as a whole, reflecting the overall motivation for entering the charrette.

2. Incentives

This section includes findings for the variables termed approach, incentive, number of prizes, value of first prize, and total value of the awards.

Three types of awards were offered by design competition grantees:

- o Prize
- o Commission
- o Prize plus commission.

Fifty percent of the grantees provided a prize plus commission to the winner of the competition. Charrette winners, in contrast, were most frequently awarded a prize alone (50%). Grantees were very stable in implementing what was planned. Those competitions which changed the planned award tended to include a commission as part of the final incentive. Grantees were consistent, on the whole, in providing the award as planned. In only one case was the cash prize withheld, and this was due to the entrant's nonconformity with competition standards for presentation. The design, however, was still awarded first place, and was used to plan the construction.

Table 10. Incentives for Competitions and Charrettes

	Competitions				Charrettes			
	Planned		Actual		Planned		Actual	
Prize	9	38%	8	33%	4	50%	4	50%
Commission	3	13%	4	17%	1	13%	1	13%
Prize plus Commission	9	38%	12	50%	3	38%	3	38%
Missing	3	13%	0	0%	--		--	

Approach and incentive are closely allied, and both determined some significance for the type of award with the number of entrants: the higher the value (particularly of the first prize) the greater the number of people competing for it.

The type of award is closely linked with the number of entrants, as was the area of design concern. As with that latter variable, the grantee should be able to use the various incentives, together with their purpose in holding the competition, as a guide to forecasting the number of entrants (as well as registrants). The consideration of these factors may provide some additional parameters for determining the budget.

The range of planned and actual prizes was from 1 to 26. The mean of planned to actual prizes increased substantially for competitions due to the inclusion of honorable mentions or other non-monetary awards, often during the actual judging.

In charrettes either one prize was awarded to the winner or a cash award was distributed equally among all entrants. The manner of awarding prizes varied directly with the type of competition held: plans awarded equal prizes, and projects a unique one.

The range of planned and actual amounts of first place awards was from \$400 to \$30,000. The mean value of planned prizes for competitions was \$7,000; while the mean value of actual prizes awarded was \$12,000. This difference can be attributed primarily to the high percentage of missing values for the planned first place award, as only four competitions changed the value of first place, two increasing it, and two decreasing it.

Table 11. Value of First Prize for Competitions

	Planned		Actual	
	No.	Pct.	No.	Pct.
Less than \$5,000	4	24%	5	21%
\$5,000 to \$20,000	10	59%	12	50%
Greater than \$20,000	3	18%	7	29%
Missing	7	-	0	-

Data on charrettes lacked planned amounts for first prize in 50 percent of the cases, which explains the following differences. The planned range was from \$2,000 to \$5,000 while the actual range was from 0 to \$5,000. The planned mean was \$1,800, while the actual mean was \$2,600. No significant or near-significant relationships were determined for this variable, which is most likely due to the very limited population.

Table 12. Value of First Prize for Charrettes

	Planned		Actual	
	No.	Pct.	No.	Pct.
Less than \$3,000	2	50%	4	50%
\$3,000 to \$5,000	0	-	2	25%
Greater than \$5,000	2	50%	2	25%
Missing	4	-	0	-

While the ranges of planned and actual amounts for the total value of awards for competitions were both from \$4,000 to \$100,000, the mean of planned amounts was \$19,000, and the mean of actual amounts was \$30,000. Total value of the award increased from planned to actual.

The only analysis which demonstrated a significant relationship was planned versus actual, while analysis of the actual total prize value by the number of entrants approached significance. This latter was directed so that the greater total value of the awards attracted the greatest number of entrants.

The most and least popular types of competitions and charrettes are summarized below:

o Most Popular

-- Competitions

Structure: Open One-Stage

Area of Design Concern: Project
Incentive: Prize plus Commission

-- Charrettes

Structure: Restricted On-Site Charrette
Area of Design Concern: Plan/Project (50-50 tie)
Incentive: Prize

o Least Popular

-- Competitions

Structure: Restricted
Area of Design Concern: Idea
Incentive: Commission

--Charrettes

Structure: ---
Area of Design Concern: Idea (none)
Incentive: Commission

The evaluation effort can not, however, attribute these results to any one cause. For example, the fact that competition grantees most frequently conducted open one-stage project competitions, and offered both a prize and a commission for the winning entry, may be attributable to:

- o Pre-application guidance to potential applicants provided by Endowment staff or others experienced in the field;
- o Design Competition Panel preferences;
- o Applicant/competition sponsor preferences;
- o Any combination of the above, or other influences.

3. Participation

The variables considered in this section include the fees charged for participation, the population which entered the competitions, and the amounts and types of publicity used, first, to attract them and, second, to disseminate their results.

The registration fee is defined as the actual monetary sum required to enter a competition: charrettes did not usually require a registration fee. A fee often provided additional revenue for the competition.

The number of entries submitted in a competition is directly related to the amount of the registration fee. The actual amount of competition registration fees ranged from no charge to \$85.00, with a mean of \$37.00. The mean of planned fees was \$28.00. Thirteen (13) competitions did not change the fee charged from the planned amount; however, of the remaining ten competitions which charged fees, eight increased the fee from the planned amount. The greatest number of competitors entered when the fee was in the middle range (\$35-\$55).

Table 13. Distribution of Competition Fees

	Planned		Actual	
	No.	Pct.	No.	Pct.
Less than \$35	9	38%	9	38%
\$35 - \$55	9	38%	8	33%
Greater than \$55	2	8%	6	25%
Missing	4	17%	1	4%

Attempts were made to determine the number of registrants attracted by each funded competition, however there was insufficient data to allow any valuable analyses. Instead, grantee reports on the numbers of actual entrants were analyzed.

The number of entries in open competitions is related to several other factors, including awards offered and registration fee. Analyses revealed a relationship between the numbers of people who entered a competition based on a certain range for the registration fee, and a direct ascending correlation between the numbers of people entered and the value and kinds of prizes offered.

Three interesting statistical findings were found for competitions:

- o The range of entries was from 5 to 340;
- o The average number of entries was 115;
- o The mode, or the most common number of entries, was 13 and 20.

Analyses of charrette entries revealed:

- o 75 percent of the charrettes had five or fewer entries;
- o The range of entries was from 3 to 10;
- o The average number of entries was 5.

Charrettes were intended to be small, intensive processes. While few explicitly planned the number of entrants, it appeared that most used the least number of people. This may also have been due to the policy of providing equal honoraria for all teams: the number of teams then possible would be limited by the amount budgeted for awards.

The types of pre-competition publicity that were described and/or provided by the grantee for both the planned and actual phases of the competition process were examined. The types of publicity analyzed were:

- o General Print
- o Professional Print
- o Electronic Media
- o Flyers
- o Posters
- o Other.

The percentages of publicity types used by competitions reflect the individual treatment of each type. This was done to show frequency as part of the larger entity, and to not discriminate against those competitions that used different publicity techniques. In other words, a design competition might have used only one or two of the publicity types, while another competition might have used three or four. The different combinations of types, as well as the prevalence of particular types, were used to ascertain what effect publicity might have had on the design competition process.

The most common method used to publicize the competition was general print. Once the grant funds were awarded, posters were frequently used, followed, to a lesser extent, by professional print and flyers. The differences between planned and actual methods are distinctive and reveal the importance of the Endowment's funding and the process of implementation, which includes the contributions of the professional advisor.

Clippings or samples of materials used were generally included in the grant file. Where samples could not be included (for example, a film clip used on a local broadcast), these were either (1) referred to in the text of the final report or (2) not mentioned at all. The former was rare and may account for the low percentage of electronic media and the high percentage of general print (i.e., newspaper clippings). The lack of specificity and of informational criteria in the Final Descriptive Reports lend credence to this hypothesis.

Table 14. Publicity for Competitions

	Planned		Actual	
	No.	Pct.	No.	Pct.
General Print	11	46%	14	58%
Professional Print	8	33%	13	54%
Electronic Media	5	21%	2	8%
Flyers	1	4%	12	50%
Posters	1	4%	12	71%
Other	3	13%	4	17%
Missing	8	33%	1	4%

Each of the various types of publicity used for charrettes (as with competitions) is treated as a separate sub-variable to show frequency as part of the largest entity, and to not discriminate against those charrettes which used differing publicity techniques. Most charrettes did not plan publicity before the grant award: once it was awarded, however, the most common technique used was general print, followed by flyers.

Table 15. Publicity for Charrettes

	Planned		Actual	
	No.	Pct.	No.	Pct.
General Print	1	13%	7	88%
Professional Print	2	25%	3	38%
Electronic Media	0	-	2	25%
Flyers	0	-	4	50%
Posters	0	-	2	25%
Other	2	25%	3	38%
Missing	4	50%	1	13%

This variable assessed the types of post-competition publicity that were described/provided by the grantee for both the planned and actual phases of the competition. The types of publicity used in disseminating the results are identical to those used in publicizing the competition, that is: general print, professional print, electronic media, flyers, posters, and others.

As with the publicity for competitions, each of these individual types is treated as a sub-variable for the charrettes: the percentages are divided by the total number of competitions. This was done to indicate the individual strengths of these publicity types, and not to discriminate against those competitions that used different combinations of variables.

Most competitions did not plan for publicity on the results of the event. Three-fourths of the competitions did, however, publicize the results via general print, followed by professional print.

Half of the charrettes did not plan for publicity on the results of the competition. Charrettes did publicize the results of the competition, however: fifty percent or more used some combination of general print, professional print and electronic media.

Table 16. Publicity of Results for Competitions and Charrettes

	Competitions				Charrettes			
	Planned		Actual		Planned		Actual	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
General Print	7	30%	18	75%	2	25%	5	63%
Professional Print	3	13%	16	67%	1	13%	4	50%
Electronic Media	4	17%	4	17%	1	13%	4	50%
Flyers	0	-	2	8%	0	-	3	38%
Posters	1	4%	3	13%	0	-	0	-
Other	4	17%	9	38%	1	13%	3	38%
Missing	15	63%	3	13%	4	50%	1	13%

Design competitions sometimes used another activity together with the publicity measures. Sixty-three (63) percent of the design competitions used a submission exhibit as part of the judging process. In the case of charrettes, these often took the form of an open house held during specific hours during the design process. Charrette attendance varied from 450 to an estimated 5000, but actual numbers were never collected or described systematically.

The amount and value spent on publicity varied considerably among grantees. Amount referred to the actual dollars spent, while value was a ranked sequence of percentages. These percentages reflected the amount spent on publicity as a part of the total cost of the competition. In many cases, this was not directly spent as budgeted: the professional advisor frequently had contacts who provided no-cost advertising, or local businesses donated time or merchandise. Examples of this include space in the local newspapers, coverage in other local media, and graphic materials (as a business contribution). However, publicity was not, in general, a major component of a design competition's budget.

Planned publicity for competitions accounted for under a tenth of the total cost of the projects in almost half of the cases. Actual publicity expenditures were not analyzed because only a third of the cases reported actual values.

Variables approaching significance were planned and actual publicity expenditures by the numbers of types of publicity used. This analysis produces a fairly linear relationship: as more money is spent, more types of publicity can be purchased.

Planned publicity for charrettes accounted for under four percent of the total cost of the projects for half of the charrettes and under 10 percent in all cases. Actual publicity expenditures were not analyzed due to insufficient data.

Table 17. Percentages Budgeted for Publicity

	Competitions					Charrettes			
	Planned		Actual			Planned		Actual	
	No.	Pct.	No.	Pct.		No.	Pct.	No.	Pct.
Less than 10%	11	46%	5	21%	Less than 4%	4	50%	2	25%
10% to 20%	6	25%	3	13%	Greater than 4%	2	25%	1	13%
Greater than 20%	4	17%	-	-	Missing	2	25%	5	63%
Missing	3	13%	16	75%					

Examination of the types of evident community support is an indicator of local interest and participation in the competitions and charrettes. This indicator was divided into six variables:

- o Community Groups
- o Public Officials
- o Private Businesses/Groups
- o Citizen Advisory Boards
- o Citizens Input
- o Case by Case.

These variables referred only to the planning stages of the competitions and charrettes, and were in the form of letters of support that accompanied the application.

The most common types of support for competitions were from community groups, public officials, and private businesses/groups, while private businesses/groups provided the most common source of support for charrettes.

Table 18. Community Support for Competitions and Charrettes

	Competition		Charrette	
	No.	Pct.	No.	Pct.
Community Groups	19	79%	3	38%
Public Officials	17	71%	4	50%
Private Businesses/Groups	17	71%	7	88%
Citizen Advisory Boards	10	42%	0	-
Citizen Input	7	29%	4	50%
Case by Case	1	4%	0	-
Missing	1	4%	1	13%

The data clearly show that neither competitions nor charrettes visibly demonstrated much effort to publicize either the competition process or its results. Whether this is due to the current reporting requirements, or whether it is, instead, reflective of an actual situation cannot be determined from this study. The importance of the publicity variables can be clarified by two points. The first is that the most common types of publicity mentioned for both competitions and charrettes were general and professional print. The former type was used to announce the competitions and their results to the community. The latter type served to advertise the competition among the population most likely to compete, and then to distribute the results of the process to the most knowledgeable and responsive audience. The second point is the relative disincentive for community participation: letters were written and citizens served on some juries, but the competition always seemed to reflect a much smaller part of the community as a whole.

III. CONCLUSIONS AND RECOMMENDATIONS

This final section presents the conclusions and recommendations drawn from the analysis of findings and the review of the grant files. In most cases, the conclusions and recommendations are grouped together under a specific finding: this is what the data mean, and this is what might be done to alter that situation.

The last two sections deal solely with recommendations concerning the application process and chiefly relate to two areas: the reporting requirements and the use that is made of the applications, as well as their potential as a management tool for the Endowment.

Grant applications present an incomplete implementation plan.

Most of the applications demonstrated very little pre-grant preparation for the proposed competition or charrette, and yet most of the competitions and charrettes were implemented without major problems. However, analysis across variables illustrates enormous differences between planned and actual status.

The competition advisor is a key factor in successful implementation.

It would appear that the introduction of the professional advisor is the single most important factor to the overall success of the project, as that provides the only consistent external source of expertise which directly affects the performance of the grantee. For most of the grantees, the problems connected with the lack of planning were resolved with the provision of an outside expert. A publication on what a competition/charrette entails, the types of procedures most commonly followed and what their effect is, would be a useful preparatory guide at the application stage.

Grantees are capable of raising funds to augment Endowment contribution.

The grantees appeared to be capable of raising the funds necessary for the competitions: while the Endowment was often the largest single contributor,

the fact that other funding sources available to the grantee accounted for at least 50 percent of the total cost indicates three things. First, it demonstrates the grantee's commitment to this type of design process. Second, it indicates the community support available for the competition through the breadth and depth of the contributions. Communities were willing to support a competition process to find an acceptable design, especially for a new building or an addition to an existing one. Third, it reveals that the lack of pre-grant planning for the competition is more probably reflective of the grantee's lack of information related to specific procedures and tasks which that design process entails: a more traditional fund-raising leading to the building process was manifestly already established in-house.

Problems resulted due to inexperienced management.

Problems arising from each of the management activities were due to inexperience in using a relatively new process. Grantees should be encouraged to undertake more thorough research of the design competition process and necessary procedures. The delays in scheduling may also stem from not knowing approximately how long specific tasks would take: while there is no need to have all the details of the competition or charrette established before the process begins, it seems logical to provide some time estimates (as opposed to actual dates) as to how long specific tasks would require. The former method allows for much greater flexibility in terms of adhering to a schedule without needing to fix a calendar date. The time factor was chronically underestimated by the grantees and then corrected (one assumes) either by a professional advisor or during actual implementation.

Architectural background of grantees hindered competition design.

The problems encountered during the competition process are particularly interesting in regard to the discrepancies in details of the plan. The criteria initially established by a grantee indicated a distinct lack of architectural/planning expertise. These discrepancies became apparent from the types of questions entrants asked, when, for example, design requirements did not fit in the space allotted. This type of error was the only source of problems

severe enough to warrant cancelling the entire process and starting all over again. In almost every case the professional advisor answered entrants' questions, and, where necessary, revised the original criteria.

Composition of the jury is a key element in the decision process.

An important element of any competition, that this evaluation did not address, is the composition of the jury. There are two principal points of interest which have emerged from working with the grantee files. The first is that the composition of the jury strongly affects the type of design chosen: where the jury is composed entirely of design professionals, the school represented by the majority will tend to sway the rest. Where the jury is composed of design professionals and local citizens with limited or no design expertise, the translation of the design plans into concrete examples (in effect, a selling job, pointing out the various strong points of the design) was an unexpected but useful outcome. This provided a clearer understanding of the design for both the professionals and the community participants, and permitted a more informed decision with regards to the design and its purpose in the community. The second point of interest is the relative power of that jury decision: additional prizes could be awarded or cash prizes withheld at its discretion. An analysis of this variable might prove both interesting and valuable to future competition sponsors.

The competition process is underbudgeted in the application.

Another principal conclusion of the evaluation is that the projects are, on the whole, underbudgeted: this again reflects the grantees' inexperience with the mechanics of holding a design competition. In almost every case where additional funding was required, however, it was obtained. The Endowment may wish to establish specific reporting requirements for budgetary information: these would provide a means with which to monitor expenditures that are subject to the greatest discrepancies.

Value of prize and type of competition are the strongest variables in assessing the competition process.

Those analyses which demonstrated significance present a composite picture of relationships, particularly connected with the type of competition and (1) the number of entrants, (2) the value of first prize, (3) the total value of both the awards, (4) the competition as a whole, and, (5) for competitions, the particular value of the entrance fee.

The greater the prize, the higher the number of entrants and the more they are willing to pay for the privilege of competing. The structure of the competition is less important than the type of compensation, which is, in turn, closely tied to the area of design concern. In other words, a commission is more likely to be part of a project than either a plan or an idea competition. Prizes were used as additional incentives when linked with projects, and they were more likely to be used as the only incentive when there was no chance of the winning design being built. Many of the competitions which did not include commissions were student-oriented.

What is interesting in these instances of significance is the difference between the planned and the actual variables. When, for example, the planned area of design concern was determined to be significant with regard to the total value of awards, it was the shift in value of the total value of awards which caused that difference. In several cases, the change was due to a decrease in the total value of the awards. No explanation was provided: a more detailed reporting requirement might reveal the grantees' rationale for such a shift. An analysis of those reasons might confirm tentative relationships established in this report.

The use of publicity is not well planned.

The publicity variables proved to be the most disappointing: the lack of reporting and of planning indicate that publicity was not used effectively. The lack of publicity is peculiar, especially when viewed in relation to demonstrated abilities at fund-raising. There were a number of avenues which

were never used in terms of expanding the local coverage: perhaps this is because the full details were not recorded, or perhaps it is because those techniques were simply not used. The most common technique used by both competitions and charrettes was general print: many of these competitions were held under the aegis of an academic institution which would not be limited to a sole means of community outreach. Many held submission exhibits: how did the public find out about these events in their community, what mechanisms were used to foster their involvement? Judging from the results, they read about it in newspapers, and not through more immediate media (e.g., radio and television). While most charrettes included members of the community on the panel of judges, many of the competitions did not.

The conclusion concerning the management and publicity activities connected with both these types of competitions is that they were not very well planned. Although the management activities were well implemented, the importance of publicity as a means of fostering interest in competitions appears to be ignored.

Revisions to the data reporting requirements may be appropriate.

The Endowment presently receives a detailed grant application form, narrative summaries of the final results of competitions, and ongoing status reports relating to the disbursement and use of Endowment funds. Because there are no standards for the information required in the final reports, there is only minimal comparability between the planning and the implementation stages. Comparable and more detailed information could be collected in a number of ways, including:

- o Require each grantee to complete a second application form when the competition is over. This would provide both the grantee and the Endowment with a management tool, using a form with which both the grantee and the Endowment are familiar, and which has already been approved by OMB.

- o Require the professional advisor to write the FDR, describing in detail the types of management activities undertaken, especially with regard to the type of competition held: why a particular activity or approach was chosen.
- o Require closer monitoring of grantees: progress reports listing problems or describing the development of particular activities could be submitted as the narrative accompaniment to payment requests. Grantees could follow the application format to indicate progress, problems, and/or changes in their original estimates.

Management strategies for the use of grant applications.

There does not appear to be any use made of the grantee files. It is anticipated that the system used by this evaluation might serve the Endowment as a means to monitor the progress of each grantee. In addition, the Endowment might consider taking the following steps:

- o Some grantees submitted a management time line with their applications. The analogous tool for the Endowment would be a time by task matrix: the time taken to implement each facet of a competition (especially when compared with the estimated time) might be exceptionally revealing in terms of problem identification.
- o Benchmark indicators, developed from this study, might be used to evaluate the grantee applications.
- o Additional studies could be performed on the grantees: in particular, regional variations, the overall effects of professional advisors, the perceived effect of the competition on the grantee and on the community, improvements in competition planning and implementation, and the use of precise and detailed case study analyses of competitions perceived by the Endowment as 'good' or 'bad' all merit further attention.

APPENDIX A:

**Descriptive Data by Evaluation
Variable for Each Grantee**

APPENDIX B:

Competition and Charrette Crosstabs

APPENDIX A:

Descriptive Data by Evaluation
Variable for Each Grantee

APPENDIX A: A USER'S GUIDE

This Appendix provides all of the coded data for each of the thirty-two grantees. It is arranged so that competitions are presented in their entirety, followed by charrettes. While the initial format may appear forbidding and confusing, the following instructions will demonstrate that it is neither, and that, in fact, its incorporation into the evaluation report makes the various statistical calculations, tables and charts more comprehensible because of the individual focus of this Appendix.

Each grantee is listed, together with the grant number, on the left hand side of the table. A series of alphabets are listed on the horizontal axis. The series begins from A to Z and goes on through AA to AZ, all the way through EB. Each of these alphabets is provided with a key, which immediately precedes the table it references. It therefore becomes a matter of identifying either a variable one wants to examine more closely or a grantee whose performance one wants to assess.

In the first case, we will use the variables Planned Flyers (CO) and Actual Flyers (CP) for the Publicity of Results for Competitions, as we are interested in the overall total of each and the changes from the planned to the actual variables. The table on the following pages lists only one case for planned flyers and only one for actual flyers. They are also not from the same grantee, which demonstrates a certain variation from Planned to Actual.

In the second case, we want to look at the Skowhegan School's publicity usage. To do this we might first draw a line under that grantee's data for all of the variables, as a way of training the eyes to reference the information. Then we need to find the range of variables which deal with publicity. These go from BW (Planned General Print for the Publicity of the Competition) through DJ (Actual Numbers of Types of Publicity). The Skowhegan School used the following methods to publicize their charrette: Planned Professional Print and Planned Other. The following methods were used to publicize the results of the charrette:

Actual General Print
Actual Professional Print
Planned Electronic Media
Actual Electronic Media
Actual Other.

An additional strategy used by the School for publicity was a submission exhibit. This charrette was considered to have a low publicity value for both planned and actual, and in fact only used three types of planned publicity and four actual.

The data presented in this Appendix can therefore be used to augment the evaluation report, by providing either additional frequencies of particular variables of interest or by providing case studies of one (or more) grantee's approach to a particular facet of design competition management.

KEY

- A Type I Grant
- B Type II Grant
- C Planned Professional Advisor
- D Actual Professional Advisor
- E Planned Schedule
- F Actual Schedule
- G Planned Testing
- H Actual Testing
- I Planned Question Period
- J Actual Question Period
- K Planned Procedural Rules
- L Actual Procedural Rules
- M Planned Problems Encountered
- N Actual Problems Encountered
- O Planned Willingness of Sponsor
- P Actual Willingness of Sponsor
- Q Planned Budget Established
- R Actual Budget Established
- S Planned Commitments Honored
- T Actual Commitments Honored
- U Planned Budget
- V Actual Budget
- W Planned Salaries
- X Actual Salaries
- Y Planned Supplies of Materials
- Z Actual Supplies of Materials

COMPETITIONS

NAME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Milwaukee County 22 4230 202	0		0	0		0				0		0			0	0	0	0		0	0	0	0	0	0	0
San Francisco Friends 22 4230 031	0				0	0						0			0	0	0	0		0	0	0	0	0		
Newport News, City of 32 4230 00187		0	0	0	0	0	0		0	0		0		0	0	0	0	0			0	0	0	0	0	0
New Orleans Museum 34 4230 00085	0		0	0		0			0	0	0	0		0	0	0	0	0		0	0	0		0	0	0
Jacob's Pillow Festival 32 4230 00186	0		0	0	0	0			0	0	0	0			0	0	0	0		0	0	0			0	
Townscape Institute 32 4230 00091	0		0		0	0						0		0	0	0	0	0		0	0	0	0	0	0	0
Boston Redvlt Authority 32 4230 00183		0	0	0	0	0				0	0	0			0	0	0	0		0	0	0	0	0	0	0
Chandler, City of 32 4230 00078	0		0	0	0	0			0	0		0		0	0	0	0	0		0	0	0	0	0	0	0
Minneapolis Soc. of Fine Arts 32 4230 00084	0		0	0	0	0				0		0		0	0	0	0	0		0	0	0	0	0	0	0
Municipal Arts Soc. of N.Y. 42 4257 0070		0		0	0	0						0		0	0	0	0	0		0	0	0	0	0	0	0
Arizona State University 42 4231 0154		0	0	0	0	0				0		0			0	0	0	0		0	0	0	0	0	0	0
NAHRO 42 4257 0071	0		0	0	0	0						0			0	0	0	0		0	0	0	0	0		
Hillside Trust 42 4257 0069	0		0	0	0	0				0		0		0	0	0	0	0		0	0	0	0	0	0	0
ASC/AIA 42 4231 0155		0	0	0	0	0				0		0			0	0	0	0		0	0	0	0		0	0
Escondido, City of 42 4257 0067		0	0	0	0	0				0	0	0			0	0	0	0		0	0	0	0	0	0	0
Roger Williams College 42 4257 0073		0	0	0		0				0		0			0	0	0	0		0	0	0	0	0		
Florida, University of 42 4257 0068	0		0	0		0					0	0		0	0	0	0	0		0	0	0	0	0		
Irwin Sweeny Miller 42 4257 0020	0		0	0	0	0			0	0	0	0			0	0	0	0		0	0	0	0	0		
VA Polytechnic Institute 42 4257 0094		0	0	0	0	0	0		0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0
Arizona Hist. Society 52 4257 0017	0		0	0		0				0		0			0	0	0	0		0	0	0	0	0	0	0
Oberlin College 52 4257 0028	0		0	0	0	0				0	0	0			0	0	0	0		0	0	0	0	0		
St. Paul, City of 52 4257 0050		0	0	0	0	0			0	0		0			0	0	0	0		0	0	0	0	0	0	0
CA/Berkeley, University of 32 4230 00077	0		0	0	0	0					0			0	0	0	0	0		0	0	0	0	0		
Ala. School of Fine Arts 52 4257 0127		0	0	0	0	0			0		0	0			0	0	0	0			0	0	0	0	0	0

KEY

AA Planned Travel
AB Actual Travel
AC Planned Permanent Equipment
AD Actual Permanent Equipment
AE Planned Fees and Other
AF Actual Fees and Other
AG Planned Publicity
AH Actual Publicity
AI Planned Prizes
AJ Actual Prizes
AK Planned Monetary Income
AL Actual Monetary Income
AM Planned In-Kind Contributions
AN Actual In-Kind Contributions
AO Planned Other Grants
AP Actual Other Grants
AQ Planned Federal Grants
AR Actual Federal Grants
AS Planned Other Revenues
AT Actual Other Revenues
AU Planned Other Assurances
AV Actual Other Assurances
AW Planned Structure (A, B, C, D, E)
AX Actual Structure (A, B, C, D, E)
AY Planned Approach (F, G, H)
AZ Actual Approach (F, G, H)

NAME	A																									
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Milwaukee County 22 4230 202	0	0			0	0	0		0	0	0	0					0	0	0	0			B	A	F	F
San Francisco Friends 22 4230 031						0	0		0	0	0	0			0	0	0	0					A	A	F	F
Newport News, City of 32 4230 00187	0	0			0	0		0	0	0	0	0	0	0			0	0		0	0		E	B	H	H
New Orleans Museum 34 4230 00085	0	0			0	0	0	0	0	0		0					0	0	0	0	0		B	B	H	G
Jacob's Pillow Festival 32 4230 00186	0	0			0	0	0		0	0	0	0					0	0			0		C	C	F	H
Townscape Institute 32 4230 00091	0	0			0	0	0		0	0	0	0	0	0	0	0	0	0			0		A			F
Boston Redvlp Authority 32 4230 00183	0	0			0	0	0	0	0	0	0	0		0			0	0	0		0		B	B	H	H
Chandler, City of 32 4230 00078	0	0			0	0	0	0	0	0	0	0					0	0	0	0	0		A	A	H	H
Minneapolis Soc. of Fine Arts 32 4230 00084		0			0	0	0	0	0	0					0	0	0	0	0	0			A	A	F	G
Municipal Arts Soc. of N.Y. 42 4257 0070	0	0			0	0	0		0	0		0	0	0	0	0	0	0	0	0	0		A	A	F	F
Arizona State University 42 4231 0154	0	0			0	0	0		0	0	0	0	0				0	0			0		A	E	G	G
NAHRO 42 4257 0071	0	0			0	0	0		0	0		0	0	0			0	0					C	C	F	F
Hillside Trust 42 4257 0069	0	0			0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0			A	H	H
ASC/AIA 42 4231 0155	0	0				0	0		0	0	0	0	0				0	0	0				C	C	F	F
Escondido, City of 42 4257 0067	0	0			0	0	0		0	0	0	0	0				0	0	0	0	0		B	B	H	H
Roger Williams College 42 4257 0073	0	0			0	0	0	0	0	0	0	0	0				0	0	0	0	0		A	A	G	G
Florida, University of 42 4257 0068	0	0			0	0			0	0	0	0					0	0					B	B	H	H
Irwin Sweeny Miller 42 4257 0020	0	0			0		0	0	0	0		0	0	0	0	0	0	0	0	0	0		A	A	H	H
VA Polytechnic Institute 42 4257 0094	0	0			0	0	0		0	0	0	0	0		0	0	0	0	0	0	0		B	B	F	F
Arizona Hist. Society 52 4257 0017	0	0			0	0	0		0	0		0	0				0	0	0	0	0		A			H
Oberlin College 52 4257 0028	0	0			0	0	0	0	0	0	0	0	0	0			0	0	0	0	0		A	A	F	F
St. Paul, City of 52 4257 0050	0	0			0	0	0	0	0	0	0	0	0				0	0	0	0	0		A			H
CA/Berkeley, University of 32 4230 00077					0	0	0		0	0	0	0					0	0			0		A	A	G	H
Ala. School of Fine Arts 52 4257 0127	0	0	0		0	0	0		0		0	0	0	0	0	0	0	0	0	0	0		B	B		H

KEY

BA Planned Area of Design Concern (I, J, K)
BB Actual Area of Design Concern (I, J, K)
BC Planned Registration Fee
BD Actual Registration Fee
BE Planned Amount of Registration Fee (H, M, L)
BF Actual Amount of Registration Fee (H, M, L)
BG Planned Incentive (A, B, C, D)
BH Actual Incentive (A, B, C, D)
BI Planned Amount of First Place
BJ Actual Amount of First Place
BK Planned Value of First Place (H, M, L)
BL Actual Value of First Place (H, M, L)
BM Planned Total Amount of Awards
BN Actual Total Amount of Awards
BO Planned Total Value of Awards (H, M, L)
BP Actual Total Value of Awards (H, M, L)
BQ Planned Number of Prizes
BR Actual Number of Prizes
BS Planned Number of Registrants
BT Actual Number of Registrants
BU Planned Number of Entrants
BV Actual Number of Entrants
BW Planned General Print
BX Actual General Print
BY Planned Professional Print
BZ Actual Professional Print

B

NAME	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Milwaukee County 22 4230 202	J	J	0	0	L	L	A	A	0	0	M	M	0	0	L	L	0	0		0	0	0				
San Francisco Friends 22 4230 031	K	K	0	0	L	L	D	D	0	0	M	H	0	0	M	H	0	0		0	0	0		0		
Newport News, City of 32 4230 00187	K	K	0	0	M	H	B	C	0	0	H	H	0	0	H	H	0	0		0		0	0	0	0	0
New Orleans Museum 34 4230 00085	K	K	0	0	M	M	C	B	0	0	L	H	0	0	M	M				0		0		0		0
Jacob's Pillow Festival 32 4230 00186	J	J	0	0	H	H	C	C	0	0	M	M	0	0	M	M	0	0		0		0				0
Townscape Institute 32 4230 00091		K	0	0	L	L	A	A	0	0	L	L	0	0	L	L	0	0	0	0	0	0		0		0
Boston Redvlt Authority 32 4230 00183	K	K		0		H	C	C		0		H		0		H		0		0		0	0	0		0
Chandler, City of 32 4230 00078	K	K	0	0	L	L	C	C	0	0	M	M	0	0	M	M	0	0		0		0		0		0
Minneapolis Soc. of Fine Arts 32 4230 00084	I	K	0	0	M	M	A	B	0	0	M	L	0	0	M	L	0	0	0	0	0	0	0	0	0	0
Municipal Arts Soc. of N.Y. 42 4257 0070	I	I	0	0	M	M	A	A	0	0	L	L	0	0	M	M	0	0	0	0		0	0	0		
Arizona State University 42 4231 0154	K	K		0		L		B	0	0	M	M	0	0	H	H	0	0		0		0		0	0	0
NAHRO 42 4257 0071	J	J	0	0	L	L	A	A	0	0	L	L	0	0	L	L	0	0		0		0				
Hillside Trust 42 4257 0069	J	J	0	0	L	L		A		0	M		0		M		0	0	0			0	0			
ASC/AIA 42 4231 0155	J	J	0	0	L	L	A	A	0	0	L	L	0	0	M	M	0	0		0		0	0			0
Escondido, City of 42 4257 0067	K	K	0	0	M	H	C	C	0	0	M	M	0	0	M	H	0	0	0	0		0	0			
Roger Williams College 42 4257 0073	K	K	0	0	H	H	A	A	0	0	H	H	0	0	H	H	0	0		0	0	0				0
Florida, University of 42 4257 0068	K	K		0		H	C	C		0		H		0		H	0	0		0		0	0		0	0
Irwin Sweeny Miller 42 4257 0020	K	K	0	0	M	M	C	C	0	0	M	M	0	0	L	L	0	0		0		0		0		0
VA Polytechnic Institute 42 4257 0094	K	J	0	0	M	M	A	A	0	0	M	M	0	0	M	M		0	0	0		0	0	0	0	0
Arizona Hist. Society 52 4257 0017	K	K	0	0	M	M		C		0		M	0	0	M	M		0	0	0		0				0
Oberlin College 52 4257 0028	K	K	0	0	L	L	A	A	0	0	M	M	0	0	L	L	0	0	0	0		0		0	0	0
St. Paul, City of 52 4257 0050		K	0	0	L	M	C	C	0	0	M	M	0	0	M	M	0	0	0	0		0	0			0
CA/Berkeley, University of 32 4230 00077	K	K					B	C	0	0	M	M	0	0	M	M		0			0					
Ala. School of Fine Arts 52 4257 0127	K	K	0	0	M	M		C		0		M	0	0	H	H		0		0	0		0			0

KEY

CA Planned Electronic Media

CB Actual Electronic Media

CC Planned Flyers

CD Actual Flyers

CE Planned Posters

CF Actual Posters

CG Planned Other

CH Actual Other

CI Planned General Print

CJ Actual General Print

CK Planned Professional Print

CL Actual Professional Print

CM Planned Electronic Media

CN Actual Electronic Media

CO Planned Flyers

CP Actual Flyers

CQ Planned Posters

CR Actual Posters

CS Planned Other

CT Actual Other

CU Planned Catalogue Distribution

CV Actual Catalogue Distribution

CW Planned Submission Exhibit

CX Actual Submission Exhibit

CY Planned Winner Exhibit

CZ Actual Winner Exhibit

Publicity for Competition

Publicity of Results

Plans

[illegible]

KEY

DA Planned Target Specific Group
DB Actual Target Specific Group
DC Planned Public Information Strategy
DD Actual Public Information Strategy
DE Planned Publicity Percentage of Budget
DF Actual Publicity Percentage of Budget
DG Planned Publicity Value (H, M, L)
DH Actual Publicity Value (H, M, L)
DI Planned Types of Publicity (No.)
DJ Actual Types of Publicity (No.)
DK Planned Community Groups
DL Actual Community Groups
DM Planned Public Officials
DN Actual Public Officials
DO Planned Private Business/Groups
DP Actual Private Business/Groups
DQ Planned Citizen Advisory Boards
DR Actual Citizen Advisory Boards
DS Planned Citizen Input
DT Actual Citizen Input
DU Planned Case by Case
DV Actual Case by Case
DW Planned Total Competition Cost
DX Actual Total Competition Cost
DY Planned Total Competition Cost
DZ Actual Total Competition Cost
EA Planned Plan to Build (y n)
EB Actual Plan to Build (y n)

Community Support

NAME	D																										E		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	
Milwaukee County 22 4230 202					0		L		0	4	0		0		0									0	0	L	L	N	N
San Francisco Friends 22 4230 031			0	0	0		L		0	6	0		0				0							0	0	L	L	Y	Y
Newport News, City of 32 4230 00187						0		L	4	6	0						0							0	0	H	H	Y	Y
New Orleans Museum 34 4230 00085					0	0	M	M	1	6	0		0		0		0		0					0	0	L	M	Y	Y
Jacob's Pillow Festival 32 4230 00186					0		L		0	6														0	0	L	L	Y	Y
Townscape Institute 32 4230 00091			0	0	0		L		0	7	0		0		0		0							0	0	L	L	Y	Y
Boston Redvlt Authority 32 4230 00183			0		0	0	L	L	1	7	0		0		0				0					0	0	H	H	Y	Y
Chandler, City of 32 4230 00078					0	0	M	L	0	6	0		0		0				0					0	0	L	L	Y	Y
Minneapolis Soc. of Fine Arts 32 4230 00084	0	0			0	0	M	M	10	9	0		0		0									0	0	M	M	N	Y
Municipal Arts Soc. of N.Y. 42 4257 0070					0		M	2	5						0									0	0	H	H	N	N
Arizona State University 42 4231 0154					0		L	2	3	0		0					0							0	0	H	H	Y	Y
NAHRO 42 4257 0071					0		H		0	5					0									0	0	L	L	N	N
Hillside Trust 42 4257 0069			0	0	0		L		4	3	0		0		0		0		0					0	0	M	M	Y	Y
ASC/AIA 42 4231 0155			0		0		H		3	3					0				0					0	0	M	M	N	N
Escondido, City of 42 4257 0067			0		0		M		3	5	0		0		0		0		0					0	0	H	H	Y	Y
Roger Williams College 42 4257 0073					0		M	L	1	5	0				0									0	0	M	M	Y	Y
Florida, University of 42 4257 0068									6	1	0		0		0		0							0	0	L	L	Y	Y
Irwin Sweeny Miller 42 4257 0020			0		0	0	H	L	0	5	0		0		0									0	0	M	M	Y	Y
VA Polytechnic Institute 42 4257 0094	0		0						5	5	0		0											0	0	H	H	Y	N
Arizona Hist. Society 52 4257 0017					0		L		1	2	0		0				0							0	0	M	M	Y	Y
Oberlin College 52 4257 0028						0	M	L	3	5	0		0		0				0					0	0	L	L	Y	Y
St. Paul, City of 52 4257 0050			0		0	0	L	M	2	7			0		0									0	0	H	M	Y	Y
CA/Berkeley, University of 32 4230 00077					0		L		0	0	0													0	0	M	M	Y	Y
Ala. School of FineArts 52 4257 0127					0		L		3	0	0		0		0									0	0	M	M	Y	Y

KEY

- A Type I Grant
- B Type II Grant
- C Planned Professional Advisor
- D Actual Professional Advisor
- E Planned Schedule
- F Actual Schedule
- G Planned Testing
- H Actual Testing
- I Planned Question Period
- J Actual Question Period
- K Planned Procedural Rules
- L Actual Procedural Rules
- M Planned Problems Encountered
- N Actual Problems Encountered
- O Planned Willingness of Sponsor
- P Actual Willingness of Sponsor
- Q Planned Budget Established
- R Actual Budget Established
- S Planned Commitments Honored
- T Actual Commitments Honored
- U Planned Budget
- V Actual Budget
- W Planned Salaries
- X Actual Salaries
- Y Planned Supplies of Materials
- Z Actual Supplies of Materials

CHARRETTES

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
St. Paul, City of (Lowert.) 42 4257 0021	0			0	0	0						0			0	0	0	0		0	0	0	0	0	0	0
CA/Santa Barbara, Univ. of 32 4230 00069	0		0	0	0	0			0	0	0	0		0	0	0	0	0		0	0	0	0	0	0	0
Pilobolus, Inc. 32 4230 00172	0			0	0	0									0	0	0	0			0	0	0	0	0	
Institute for Urban Design 32 4230 00082	0		0	0	0	0									0	0	0	0		0	0	0	0	0		0
Skowhegan School 22 4230 034	0		0	0										0	0	0	0	0			0	0	0	0	0	0
Triton Museum of Art 22 4230 214	0			0		0				0		0			0	0	0	0		0	0	0	0	0	0	0
ACSA 22 4230 192	0			0		0						0			0	0	0	0		0	0	0	0	0		0
Friends of the Library 22 4230 223	0					0									0	0	0	0		0	0	0	0	0	0	0

KEY

AA Planned Travel
AB Actual Travel
AC Planned Permanent Equipment
AD Actual Permanent Equipment
AE Planned Fees and Other
AF Actual Fees and Other
AG Planned Publicity
AH Actual Publicity
AI Planned Prizes
AJ Actual Prizes
AK Planned Monetary Income
AL Actual Monetary Income
AM Planned In-Kind Contributions
AN Actual In-Kind Contributions
AO Planned Other Grants
AP Actual Other Grants
AQ Planned Federal Grants
AR Actual Federal Grants
AS Planned Other Revenues
AT Actual Other Revenues
AU Planned Other Assurances
AV Actual Other Assurances
AW Planned Structure (A, B, C, D, E)
AX Actual Structure (A, B, C, D, E)
AY Planned Approach (F, G, H)
AZ Actual Approach (F, G, H)

CHARRETTES

A

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Paul, City of (Lowert.)
4257 0021

0 0 0 0 0 0 0 0 0 0 0 0 0 D D F F

CA/Santa Barbara, Univ. of
2 4230 00069

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 D D H H

Piobolus, Inc.
32 4230 00172

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 D G G

Institute for Urban Design
J2 4230 00082

```
0 0 0      0 0 0 0 0 0      0 0 0 0 0 0      0 0      D D F
```

Whelan School
2 4230 034

0 0 0 0 0 0 0 0 0 0 0 0 0 D D H H

Triton Museum of Art
2 4230 214

0 0 0 0 0 0 0 0 0 0 0 0 0 0 D D H H

ALSA
22 4230 192

0 0 0 0 0 0 0 0 0 0 0 0 0 0 D D F F

ends of the Library
22 4230 223

0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 D D F F

KEY

BA Planned Area of Design Concern (I, J, K)
BB Actual Area of Design Concern (I, J, K)
BC Planned Registration Fee
BD Actual Registration Fee
BE Planned Amount of Registration Fee (H, M, L)
BF Actual Amount of Registration Fee (H, M, L)
BG Planned Incentive (A, B, C, D)
BH Actual Incentive (A, B, C, D)
BI Planned Amount of First Place
BJ Actual Amount of First Place
BK Planned Value of First Place (H, M, L)
BL Actual Value of First Place (H, M, L)
BM Planned Total Amount of Awards
BN Actual Total Amount of Awards
BO Planned Total Value of Awards (H, M, L)
BP Actual Total Value of Awards (H, M, L)
BQ Planned Number of Prizes
BR Actual Number of Prizes
BS Planned Number of Registrants
BT Actual Number of Registrants
BU Planned Number of Entrants
BV Actual Number of Entrants
BW Planned General Print
BX Actual General Print
BY Planned Professional Print
BZ Actual Professional Print

CHARRETTES

B

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

St. Paul, City of (Lowert.)
42 4257 0021

J J O L A A O O L L O O M M O O O O O

A/Santa Barbara, Univ. of
32 4230 00069

K K O O H H A A O O H H O O H H O O O O O O O O

ilobolus, Inc.
32 4230 00172

K K B B O L O L O O O O

Institute for Urban Design
32 4230 00082

J J A A O O L L O O H H O O O O O

Skowhegan School
22 4230 034

K K C O M O O M L O O O O

riton Museum of Art
22 4230 214

J J C C O M O O M M O O O O

CSA
22 4230 192

J J A O L O O M M O O O O

Friends of the Library
22 4230 223

I J A A O O H H O O L L O O O O

KEY

CA	Planned Electronic Media	
CB	Actual Electronic Media	Publicity for Competition
CC	Planned Flyers	
CD	Actual Flyers	
CE	Planned Posters	
CF	Actual Posters	
CG	Planned Other	
CH	Actual Other	
CI	Planned General Print	
CJ	Actual General Print	
CK	Planned Professional Print	
CL	Actual Professional Print	
CM	Planned Electronic Media	Publicity of Results
CN	Actual Electronic Media	
CO	Planned Flyers	
CP	Actual Flyers	
CQ	Planned Posters	
CR	Actual Posters	
CS	Planned Other	
CT	Actual Other	
CU	Planned Catalogue Distribution	
CV	Actual Catalogue Distribution	
CW	Planned Submission Exhibit	
CX	Actual Submission Exhibit	
CY	Planned Winner Exhibit	
CZ	Actual Winner Exhibit	Plans

CHARRETTES

C

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

St. Paul, City of (Lowert.)
42 4257 0021

0 0 0 0

CA/Santa Barbara, Univ. of
32 4230 00069

0 0 0 0 0 0 0 0

Pilobolus, Inc.
32 4230 00172

Institute for Urban Design
32 4230 00082

0 0 0 0 0 0

Skowhegan School
22 4230 034

0 0 0 0 0 0 0 0

Triton Museum of Art
22 4230 214

0 0 0 0 0 0 0 0

ACSA
22 4230 192

0 0 0 0

Friends of the Library
22 4230 223

0 0 0 0 0 0 0 0

KEY

DA Planned Target Specific Group
DB Actual Target Specific Group
DC Planned Public Information Strategy
DD Actual Public Information Strategy
DE Planned Publicity Percentage of Budget
DF Actual Publicity Percentage of Budget
DG Planned Publicity Value (H, M, L)
DH Actual Publicity Value (H, M, L)
DI Planned Types of Publicity (No.)
DJ Actual Types of Publicity (No.)
DK Planned Community Groups
DL Actual Community Groups
DM Planned Public Officials
DN Actual Public Officials
DO Planned Private Business/Groups
DP Actual Private Business/Groups
DQ Planned Citizen Advisory Boards
DR Actual Citizen Advisory Boards
DS Planned Citizen Input
DT Actual Citizen Input
DU Planned Case by Case
DV Actual Case by Case
DW Planned Total Competition Cost
DX Actual Total Competition Cost
DY Planned Total Competition Cost
DZ Actual Total Competition Cost
EA Planned Plan to Build (y n)
EB Actual Plan to Build (y n)

Community Support

CHARRETTES

D

E

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z A B

St. Paul, City of (Lowert.) 42 4257 0021				0					1	6				0													0	0	M	M	Y	Y
CA/Santa Barbara, Univ. of 32 4230 00069			0	0	0		M		2	8	0			0			0										0	0	M	M	Y	Y
Pilobolus, Inc. 32 4230 00172									0	1				0													0	0	L	L	Y	Y
Institute for Urban Design 32 4230 00082					0	0	H	M	3	3	0		0	0			0										0	0	M	L	N	N
Skowhegan School 22 4230 034					0	0	L	L	3	4			0	0			0										0	0	H	M	Y	Y
Triton Museum of Art 22 4230 214		0			0	0	L	L	0	7	0		0	0													0	0	L	L	Y	Y
ACSA 22 4230 192					0		L		0	4																	0	0	M	M	N	N
Friends of the Library 22 4230 223					0		L		1	7	0		0	0			0										0	0	L	L	Y	Y

APPENDIX B:

Competition and Charrette Crosstabs

APPENDIX B: A USER'S GUIDE

This Appendix presents the statistical tests performed as the core of the analysis procedure. The data represented in Appendix A are used to describe types of variables used and to count the number of times different types or combinations of types may be used. The tables in this Appendix on the other hand, refer to the principal analytical statistic used. This is chi-square, which was defined in the first section of the evaluation report. It is used to measure the degree of association between two variables, in other words, the effect one thing may have on another.

Just what does one of the tables in this Appendix tell us? If we break one of these into its component parts, we get a much clearer picture of the types of information presented. Then we can go on to determine just how chi-square relates to this body of information.

A typical table is presented below. The x axis refers to the horizontal information, and the y axis to the vertical. In addition, there are four numbers in each of the boxes. Going from top down, these refer to number, row percent, column percent and total percent.

Number refers to the actual count of the combinations presented on the table. For example, projects with a high actual value of award occur five times. Row percent refers to the percentage of the horizontal group of boxes. These add up to one-hundred, and represent the total number of cases in that row. Thus the row percents for plan are: 0% (high), 66.7% (medium), and 33.3% (low). Column percent, on the other hand, represents the total percent of the vertical axis. Column percents for the low actual value of award are: 16.7% (idea), 33.3% (plan), and 50.0% (project). Total percent refers to the particular number of cases in each box in proportion to the total number of cases overall. The sum of the nine total percent figures will equal 100%. Row totals and column totals are the number and total percent of all of the cases in one line of the table in relation to the total number of cases.

Chi-square uses this table to determine the measure of association between the two variables. The computer has already performed the tricky calculation, but

-----BY-----
 ACTUAL VALUE OF AWARD - (X AXIS)
 ACTUAL AREA OF DESIGN CONCERN - (Y AXIS)

Number Row % Column % Total %	HIGH	MEDIUM	LOW	ROW TOTALS
IDEA	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1.0 100.0 16.7 4.3	1.0 4.3
PLAN	0 0.0 0.0 0.0	4.0 66.7 33.3 17.4	0 33.3 33.3 8.7	6.0 26.1
PROJECT	5.0 31.3 100.0 21.7	8.0 50.0 66.7 34.8	3.0 18.8 50.0 13.0	16.0 69.6
COLUMN TOTALS	5.0 21.7	12.0 52.2	6.0 26.1	23.0 100.0

Chi-square = 5.51 Valid cases = 23
 Degrees of freedom = 4 Missing cases = 1
 Responsible rate = 95.8%

Caution: 8 cells contain an expected frequency less than 5.

it is up to us to determine if that value is significant or not. In essence, significance in this use means whether or not a relationship exists. In order to determine significance, we need four pieces of information. These are: the value for chi-square, the value of the degrees of freedom, the level of significance and a table of the chi-square distribution. The value for chi-square is provided below the table, as is the value for the degrees of freedom. Degrees of freedom refer to the number of independent comparisons. In order to compensate for overlapping cases (which would result from simply multiplying the number of rows by the number of columns), the degree of freedom is determined by multiplying the number of columns minus one by the number of rows minus one. For the table provided, there are three rows and three columns, which produce the following equation.

$$(3-1) \times (3-1) = (2) \times (2) = 4$$

There are four degrees of freedom for this table. The level of significance that is most commonly used in statistical tests is .05, which assures that there is a 95% probability of statistical relationship existing, rather than it being the result of random chance. Chi-square tables contain the values for all of the possible degrees of freedom for realistic tables, at several different levels of significance.

We now have a value of chi-square of 5.51, for four degrees of freedom, at an .05 level of significance. Going to the Chi-Square Distribution Tables reveals that the value for chi-square is 9.48773. Since the value we had for chi-square is less, we therefore determine that there is no significant relationship between the actual value of award and the actual area of design concern. This type of procedure was performed for all of the tables in this Appendix to determine the significance of the relationships.

level of significance

	0.995	0.990	0.975	0.950	0.900	0.750	0.500		0.250	0.100	0.050	0.025	0.010	0.005	0.001
1	392704	157088	982069	393214	0.0157908	0.1015308	0.454937	1	1.32330	2.70554	3.84146	5.02389	6.63400	7.87944	10.828
2	0.0100251	0.0201007	0.0506356	0.102587	0.210720	0.575364	1.38629	2	2.77259	4.60517	5.99147	7.37776	9.21034	10.5966	13.816
3	0.0717212	0.114832	0.215795	0.351846	0.584375	1.212534	2.36597	3	4.10835	6.25139	7.81473	9.34840	11.3449	12.8381	16.266
4	0.206990	0.297110	0.484419	0.710721	1.063623	1.92255	3.35670	4	5.38527	7.77944	9.48773	11.1433	13.2767	14.8602	18.467
5	0.411740	0.554300	0.831211	1.145476	1.61031	2.67460	4.35146	5	6.62568	9.23635	11.0705	12.8325	15.0863	16.7496	20.515
6	0.675727	0.872085	1.237347	1.63539	2.20413	3.45460	5.34812	6	7.84080	10.0446	12.5916	14.4494	16.8119	18.5476	22.458
7	0.989265	1.239043	1.68987	2.16735	2.83311	4.25485	6.34581	7	9.03715	12.0170	14.0071	16.0128	18.4753	20.2777	24.322
8	1.344419	1.646482	2.17973	2.73264	3.48954	5.07064	7.34412	8	10.2188	13.3616	15.5073	17.5346	20.0902	21.9550	26.125
9	1.734926	2.087912	2.70039	3.32511	4.16816	5.89883	8.34283	9	11.3887	14.6837	16.9190	19.0228	21.6600	23.5893	27.877
10	2.15585	2.55821	3.24697	3.94030	4.86518	6.73720	9.34182	10	12.5489	15.9871	18.3070	20.4831	23.2093	25.1882	29.588
11	2.60321	3.05347	3.81675	4.57481	5.57779	7.58412	10.3410	11	13.7007	17.2750	19.6751	21.9200	24.7250	26.7569	31.264
12	3.07382	3.57056	4.40379	5.22603	6.30380	8.43842	11.3403	12	14.8454	18.5494	21.0261	23.3367	26.2170	28.2995	32.909
13	3.56503	4.10691	5.00874	5.89186	7.04150	9.29906	12.3398	13	15.9839	19.8119	22.3621	24.7356	27.6883	29.8194	34.528
14	4.07468	4.66043	5.62872	6.57063	7.78963	10.1653	13.3393	14	17.1170	21.0642	23.6848	26.1190	29.1413	31.3193	36.123
15	4.60094	5.22935	6.26214	7.26094	8.54676	11.0366	14.3389	15	18.2451	22.3072	24.9958	27.4884	30.5779	32.8013	37.697
16	5.14224	5.81221	6.90766	7.96164	9.31223	11.9122	15.3385	16	19.3688	23.5418	26.2962	28.8454	31.9999	34.2672	39.252
17	5.69724	6.40776	7.58418	8.67176	10.0852	12.7919	16.3381	17	20.4887	24.7690	27.5871	30.1910	33.4087	35.7185	40.790
18	6.26481	7.01491	8.23075	9.39046	10.8449	13.6753	17.3379	18	21.6049	25.9894	28.8693	31.5264	34.8053	37.1564	42.312
19	6.84398	7.63273	8.90655	10.1170	11.6509	14.5620	18.3376	19	22.7178	27.2036	30.1435	32.8523	36.1908	38.5822	43.820
20	7.43386	8.26040	9.59083	10.8508	12.4426	15.4518	19.3374	20	23.8277	28.4120	31.4104	34.1696	37.5662	39.9968	45.315
21	8.03366	8.89720	10.28293	11.5913	13.2396	16.3444	20.3372	21	24.9348	29.6151	32.6705	35.4789	38.9321	41.4010	46.797
22	8.64272	9.54249	10.9823	12.3380	14.0415	17.2396	21.3370	22	26.0393	30.8133	33.9244	36.7807	40.2894	42.7956	48.268
23	9.26042	10.19587	11.6885	13.0905	14.8479	18.1373	22.3369	23	27.1413	32.0069	35.1725	38.0767	41.6384	44.1813	49.728
24	9.88623	10.8564	12.4011	13.8484	15.6587	19.0372	23.3367	24	28.2412	33.1963	36.4151	39.3641	42.9798	45.5585	51.179
25	10.5197	11.5240	13.1197	14.6114	16.4734	19.9393	24.3366	25	29.3389	34.3816	37.6525	40.6465	44.3141	46.9278	52.620
26	11.1603	12.1981	13.8439	15.3791	17.2919	20.8434	25.3364	26	30.4345	35.5631	38.8852	41.9232	45.6417	48.2899	54.052
27	11.8076	12.8786	14.5733	16.1513	18.1138	21.7494	26.3363	27	31.5284	36.7412	40.1133	43.1944	46.9630	49.6449	55.476
28	12.4613	13.5648	15.3079	16.9279	18.9392	22.6572	27.3363	28	32.6205	37.9159	41.3372	44.4607	48.2782	50.9033	56.892
29	13.1211	14.2565	16.0471	17.7083	19.7677	23.5666	28.3362	29	33.7109	39.0875	42.5569	45.7222	49.5879	52.3356	58.302
30	13.7867	14.9535	16.7908	18.4926	20.5992	24.4776	29.3360	30	34.7998	40.2560	43.7729	46.9792	50.8922	53.6720	59.703
40	20.7065	22.1643	24.4331	26.6093	29.0505	33.6603	39.3354	40	45.6160	51.8050	55.7585	59.3417	63.6907	66.7659	73.402
50	27.9907	29.7067	32.3574	34.7642	37.6886	42.9421	49.3349	50	56.3336	63.1671	67.5048	71.4202	76.1539	79.4000	86.661
60	35.5346	37.4848	40.4817	43.1879	46.4589	52.2938	59.3347	60	66.9814	74.3970	79.0819	83.2976	88.3794	91.9517	99.607
70	43.2752	45.4418	48.7576	51.7393	55.3290	61.6983	69.3344	70	77.5766	85.5271	90.5312	95.0231	100.425	104.215	112.317
80	51.1720	53.5400	57.1532	60.3915	64.2778	71.1445	79.3343	80	88.1303	96.5782	101.879	106.629	112.329	116.321	124.839
90	59.1963	61.7541	65.6466	69.1260	73.2912	80.6247	89.3342	90	98.6499	107.565	113.145	118.136	124.116	128.209	137.208
100	67.3276	70.0648	74.2219	77.9295	82.3581	90.1332	99.3341	100	109.141	118.498	124.342	129.561	135.807	140.169	149.449

degrees of freedom

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planned total competition value - (X Axis)

- - - - BY - - - -

actual total competition value - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals

	I 6	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 6
	I 85.7	I 0.0	I 0.0	I 25.0
High	I 25.0	I 0.0	I 0.0	I

	I 1	I 8	I 10.0	I
	I 10.0	I 80.0	I 11.1	I 10
	I 14.3	I 100.0	I 4.2	I 41.7
Medium	I 4.2	I 33.3	I	I

	I 0	I 0	I 8	I
	I 0.0	I 0.0	I 100.0	I 8
	I 0.0	I 0.0	I 88.9	I 33.3
Low	I 0.0	I 0.0	I 33.3	I

Column	I 7	I 8	I 9	I 24
Totals	I 29.2	I 33.3	I 37.5	I 100.0

Chi square = 37.71
Degrees of freedom = 4

Valid cases = 24
Missing cases = 0
Response rate = 100.0%

Caution: 9 cells contain an expected frequency less than 5

planned structure - (X Axis)
 - - - - BY - - - -
 actual structure - (Y Axis)

Number Row % Column % Total %	I Open I One I Stage	I Open I Two I Stage	I Restricted	I Charrette	I Invited	I Row I Totals
Open One Stage	I 8 I 88.9 I 88.9 I 40.0	I 1 I 11.1 I 14.3 I 5.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 9 I 45.0
Open Two Stage	I 1 I 12.5 I 11.1 I 5.0	I 6 I 75.0 I 85.7 I 30.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 1 I 12.5 I 100.0 I 5.0	I 8 I 40.0
Restricted	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 3 I 100.0 I 100.0 I 15.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 3 I 15.0
Charrette	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0
Invited	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0
Column Totals	I 9 I 45.0	I 7 I 35.0	I 3 I 15.0	I 0 I 0.0	I 1 I 5.0	I 20 I 100.0

Chi square = 31.75
 Degrees of freedom = 6

Valid cases = 20
 Missing cases = 4
 Response rate = 83.3 %

Caution: 12 cells contain an expected frequency less than 5
 Note: 1 column & 2 rows not included in Chi square calculations

planned structure - (X Axis)
 - - - - BY - - - -
 ranked no. of entrants - (Y Axis)

Number	I	I	I	I	I	I	I
Row %	I Open	I Open	I	I	I	I	I
Column %	I One	I Two	I Restricted	I Charrette	I Invited	I	I Row
Total %	I Stage	I Stage	I	I	I	I	I Totals
High	I 1	I 3	I 0	I 0	I 0	I	I
	I 25.0	I 75.0	I 0.0	I 0.0	I 0.0	I	I 4
	I 11.1	I 37.5	I 0.0	I 0.0	I 0.0	I	I 19.0
	I 4.8	I 14.3	I 0.0	I 0.0	I 0.0	I	I
Medium	I 5	I 2	I 2	I 0	I 1	I	I
	I 50.0	I 20.0	I 20.0	I 0.0	I 10.0	I	I 10
	I 55.6	I 25.0	I 66.7	I 0.0	I 100.0	I	I 47.6
	I 23.8	I 9.5	I 9.5	I 0.0	I 4.8	I	I
Low	I 3	I 3	I 1	I 0	I 0	I	I
	I 42.9	I 42.9	I 14.3	I 0.0	I 0.0	I	I 7
	I 33.3	I 37.5	I 33.3	I 0.0	I 0.0	I	I 33.3
	I 14.3	I 14.3	I 4.8	I 0.0	I 0.0	I	I
Column	I 9	I 8	I 3	I 0	I 1	I	I 21
Totals	I 42.9	I 38.1	I 14.3	I 0.0	I 4.8	I	I 100.0

Chi square = 4.64
 Degrees of freedom = 6

Valid cases = 21
 Missing cases = 3
 Response rate = 87.5 %

Caution: 12 cells contain an expected frequency less than 5
 Note: 1 column not included in Chi square calculations

actual structure - (X Axis)

BY

ranked no. of entrants - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I		
Row %	I	Open	I	Open	I	I	I	I	I	I		
Column %	I	One	I	Two	I	Restricted	I	Charrette	I	Invited	I	Row
Total %	I	Stage	I	Stage	I	I	I	I	I	I	I	Totals
	I		I		I		I		I		I	
	I	0	I	4	I	0	I	0	I	0	I	
	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	4
High	I	0.0	I	50.0	I	0.0	I	0.0	I	0.0	I	19.0
	I	0.0	I	19.0	I	0.0	I	0.0	I	0.0	I	
	I		I		I		I		I		I	
	I	5	I	3	I	2	I	0	I	0	I	
	I	50.0	I	30.0	I	20.0	I	0.0	I	0.0	I	10
Medium	I	50.0	I	37.5	I	66.7	I	0.0	I	0.0	I	47.6
	I	23.8	I	14.3	I	9.5	I	0.0	I	0.0	I	
	I		I		I		I		I		I	
	I	5	I	1	I	1	I	0	I	0	I	
	I	71.4	I	14.3	I	14.3	I	0.0	I	0.0	I	7
Low	I	50.0	I	12.5	I	33.3	I	0.0	I	0.0	I	33.3
	I	23.8	I	4.8	I	4.8	I	0.0	I	0.0	I	
	I		I		I		I		I		I	
Column	I	10	I	8	I	3	I	0	I	0	I	21
Totals	I	47.6	I	38.1	I	14.3	I	0.0	I	0.0	I	100.0

Chi square = 8.78
Degrees of freedom = 4

Valid cases = 21
Missing cases = 3
Response rate = 87.5 %

Caution: 9 cells contain an expected frequency less than 5
Note: 2 columns not included in Chi square calculations

planned structure - (X Axis)

BY

planned total competition value - (Y Axis)

Number	I	Open	I	Open	I	Restricted	I	Charrette	I	Invited	I	Row
Row %	I	One	I	Two	I		I		I		I	
Column %	I	Stage	I	Stage	I		I		I		I	Totals
Total %	I		I		I		I		I		I	
High	I	2	I	4	I	0	I	0	I	1	I	
	I	28.6	I	57.1	I	0.0	I	0.0	I	14.3	I	7
	I	22.2	I	50.0	I	0.0	I	0.0	I	100.0	I	33.3
	I	9.5	I	19.0	I	0.0	I	0.0	I	4.8	I	
Medium	I	4	I	1	I	1	I	0	I	0	I	
	I	66.7	I	16.7	I	16.7	I	0.0	I	0.0	I	6
	I	44.4	I	12.5	I	33.3	I	0.0	I	0.0	I	28.6
	I	19.0	I	4.8	I	4.8	I	0.0	I	0.0	I	
Low	I	3	I	3	I	2	I	0	I	0	I	
	I	37.5	I	37.5	I	25.0	I	0.0	I	0.0	I	8
	I	33.3	I	37.5	I	66.7	I	0.0	I	0.0	I	38.1
	I	14.3	I	14.3	I	9.5	I	0.0	I	0.0	I	
Column	I	9	I	8	I	3	I	0	I	1	I	21
Totals	I	42.9	I	38.1	I	14.3	I	0.0	I	4.8	I	100.0

Chi square = 6.23
Degrees of freedom = 6

Valid cases = 21
Missing cases = 3
Response rate = 87.5 %

Caution: 12 cells contain an expected frequency less than 5
Note: 1 column not included in Chi square calculations

actual structure - (X Axis)

BY

actual total competition value - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I
Row %	I	Open	I	Open	I	I	I	I	I	I
Column %	I	One	I	Two	I	Restricted	Charrette	I	Invited	I
Total %	I	Stage	I	Stage	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I
High	I	1	I	5	I	0	I	0	I	0
	I	16.7	I	83.3	I	0.0	I	0.0	I	0.0
	I	8.3	I	62.5	I	0.0	I	0.0	I	0.0
	I	4.3	I	21.7	I	0.0	I	0.0	I	0.0
Medium	I	6	I	2	I	1	I	0	I	0
	I	66.7	I	22.2	I	11.1	I	0.0	I	0.0
	I	50.0	I	25.0	I	33.3	I	0.0	I	0.0
	I	26.1	I	8.7	I	4.3	I	0.0	I	0.0
Low	I	5	I	1	I	2	I	0	I	0
	I	62.5	I	12.5	I	25.0	I	0.0	I	0.0
	I	41.7	I	12.5	I	66.7	I	0.0	I	0.0
	I	21.7	I	4.3	I	8.7	I	0.0	I	0.0
Column	I	12	I	8	I	3	I	0	I	0
Totals	I	52.2	I	34.8	I	13.0	I	0.0	I	0.0

Chi square = 9.270001 Valid cases = 23
 Degrees of freedom = 4 Missing cases = 1
 Response rate = 95.8 %

Caution: 9 cells contain an expected frequency less than 5
 Note: 2 columns not included in Chi square calculations

- - - - BY - - - -

Number	I	I	I	I
Row %	I	I	I	I
Column %	I Idea	I Plan	I Project	I Row
Total %	I	I	I	Totals
	I-----I	I-----I	I-----I	I-----I
	I 1 I 0 I 3 I			
	I 25.0 I 0.0 I 75.0 I 4			
High	I 50.0 I 0.0 I 23.1 I 19.0			
	I 4.8 I 0.0 I 14.3 I			
	I-----I	I-----I	I-----I	I-----I
	I 0 I 4 I 6 I			
	I 0.0 I 40.0 I 60.0 I 10			
Medium	I 0.0 I 66.7 I 46.2 I 47.6			
	I 0.0 I 19.0 I 28.6 I			
	I-----I	I-----I	I-----I	I-----I
	I 1 I 2 I 4 I			
	I 14.3 I 28.6 I 57.1 I 7			
Low	I 50.0 I 33.3 I 30.8 I 33.3			
	I 4.8 I 9.5 I 19.0 I			
	I-----I	I-----I	I-----I	I-----I
Column Totals	I 2 I 6 I 13 I 21			
	I 9.5 I 28.6 I 61.9 I 100.0			

Valid cases = 21
Missing cases = 3
Response rate = 87.5 %

Caution: 8 cells contain an expected frequency less than 5

- - - - BY - - - -

BY

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I Idea	I Plan	I Project	I Row Totals
	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 4	I
	I 0.0	I 0.0	I 100.0	I 4
High	I 0.0	I 0.0	I 26.7	I 19.0
	I 0.0	I 0.0	I 19.0	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 3	I 7	I
	I 0.0	I 30.0	I 70.0	I 10
Medium	I 0.0	I 60.0	I 46.7	I 47.6
	I 0.0	I 14.3	I 33.3	I
	I-----I	I-----I	I-----I	I-----I
	I 1	I 2	I 4	I
	I 14.3	I 28.6	I 57.1	I 7
Low	I 100.0	I 40.0	I 26.7	I 33.3
	I 4.8	I 9.5	I 19.0	I
	I-----I	I-----I	I-----I	I-----I
Column	I 1	I 5	I 15	I 21
Totals	I 4.8	I 23.8	I 71.4	I 100.0

Chi square = 3.84
Degrees of freedom = 4

Valid cases = 21
Missing cases = 3
Response rate = 87.5 %

Caution: 7 cells contain an expected frequency less than 5

actual area of design concern - (X Axis)

- - - - BY - - - -

actual total competition value - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I Idea	I Plan	I Project	I Totals
	I-----I-----I-----I-----I-----			
	I 1	I 0	I 5	I
	I 16.7	I 0.0	I 83.3	I 6
High	I 100.0	I 0.0	I 31.3	I 26.1
	I 4.3	I 0.0	I 21.7	I
	I-----I-----I-----I-----I-----			
	I 0	I 3	I 6	I
	I 0.0	I 33.3	I 66.7	I 9
Medium	I 0.0	I 50.0	I 37.5	I 39.1
	I 0.0	I 13.0	I 26.1	I
	I-----I-----I-----I-----I-----			
	I 0	I 3	I 5	I
	I 0.0	I 37.5	I 62.5	I 8
Low	I 0.0	I 50.0	I 31.3	I 34.8
	I 0.0	I 13.0	I 21.7	I
	I-----I-----I-----I-----I-----			
Column	I 1	I 6	I 16	I 23
Totals	I 4.3	I 26.1	I 69.6	I 100.0

Chi square = 5.21
Degrees of freedom = 4

```
Valid cases    = 23
Missing cases  = 1
Response rate  = 95.8 %
```

Caution: 7 cells contain an expected frequency less than 5

- - - - BY - - - - planned approach - (X Axis)
 actual approach - (Y Axis)

Number	I	I	I	I	I
Row %	I	I	I	I	I
Column %	I	I	I	I	I
Total %	I	I	I	I	I
	Prize	Commission	Prize and Commission	Row Totals	
Prize	I 7	I 0	I 0	I	
	I 100.0	I 0.0	I 0.0	I 7	
	I 77.8	I 0.0	I 0.0	I 33.3	
	I 33.3	I 0.0	I 0.0	I	
Commission	I 1	I 2	I 1	I	
	I 25.0	I 50.0	I 25.0	I 4	
	I 11.1	I 66.7	I 11.1	I 19.0	
	I 4.8	I 9.5	I 4.8	I	
Prize and Commission	I 1	I 1	I 8	I	
	I 10.0	I 10.0	I 80.0	I 10	
	I 11.1	I 33.3	I 88.9	I 47.6	
Column Totals	I 4.8	I 4.8	I 38.1	I	
	I 9	I 3	I 9	I 21	
	I 42.9	I 14.3	I 42.9	I 100.0	

Chi square	= 19.36	Valid cases	= 21
Degrees of freedom	= 4	Missing cases	= 3
		Response rate	= 87.5 %

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - -

- - - - BY - - - -

- - - - BY - - - -

- - - - BY - - - -

- - - - BY - - - -

- - - - BY - - - -

actual approach - (X Axis)
- - - - BY - - - - ranked no. of entrants - (Y Axis)

[illegible]

Chi square = 8.32
Degrees of freedom = 4

Valid cases = 21
Missing cases = 3
Response rate = 87.5

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - - planned approach - (X Axis)
 planned total competition value - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	Prize	Commission	Prize and Commission	Row Totals

High	I 2	I 1	I 4	I
	I 28.6	I 14.3	I 57.1	I 7
	I 22.2	I 33.3	I 44.4	I 33.3
	I 9.5	I 4.8	I 19.0	I

Medium	I 2	I 2	I 2	I
	I 33.3	I 33.3	I 33.3	I 6
	I 22.2	I 66.7	I 22.2	I 28.6
	I 9.5	I 9.5	I 9.5	I

Low	I 5	I 0	I 3	I
	I 62.5	I 0.0	I 37.5	I 8
	I 55.6	I 0.0	I 33.3	I 38.1
	I 23.8	I 0.0	I 14.3	I

Column	I 9	I 3	I 9	I 21
Totals	I 42.9	I 14.3	I 42.9	I 100.0

Chi square = 4.36
 Degrees of freedom = 4

Valid cases = 21
 Missing cases = 3
 Response rate = 87.5 %

Caution: 9 cells contain an expected frequency less than 5

actual approach - (X Axis)

actual total competition value - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	Prize	Commission	Prize and Commission	Row Totals
High	2	1	3	
	33.3	16.7	50.0	6
	25.0	25.0	27.3	26.1
	8.7	4.3	13.0	
Medium	1	3	5	
	11.1	33.3	55.6	9
	12.5	75.0	45.5	39.1
	4.3	13.0	21.7	
Low	5	0	3	
	62.5	0.0	37.5	8
	62.5	0.0	27.3	34.8
	21.7	0.0	13.0	
Column Totals	8	4	11	23
	34.8	17.4	47.8	100.0

Chi square = 6.22
Degrees of freedom = 4

Valid cases = 23
Missing cases = 1
Response rate = 95.8 %

Caution: 9 cells contain an expected frequency less than 5

planned incentive - (X Axis)

- - - - BY - - - -

actual incentive - (Y Axis)

Number	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I
Total %	I	I	I	I	I	I	I
	Monetary	Contractual	Monetary and Contractual	Other			Row Totals
	I	I	I	I	I	I	I
	8	0	1	0			
Monetary	I 88.9	I 0.0	I 11.1	I 0.0	I	I	I 9
	I 88.9	I 0.0	I 12.5	I 0.0	I	I	I 45.0
	I 40.0	I 0.0	I 5.0	I 0.0	I	I	I
	I	I	I	I	I	I	I
	1	0	1	0			
Contractual	I 50.0	I 0.0	I 50.0	I 0.0	I	I	I 2
	I 11.1	I 0.0	I 12.5	I 0.0	I	I	I 10.0
	I 5.0	I 0.0	I 5.0	I 0.0	I	I	I
	I	I	I	I	I	I	I
	0	2	6	0			
Monetary and Contractual	I 0.0	I 25.0	I 75.0	I 0.0	I	I	I 8
	I 0.0	I 100.0	I 75.0	I 0.0	I	I	I 40.0
	I 0.0	I 10.0	I 30.0	I 0.0	I	I	I
	I	I	I	I	I	I	I
	0	0	0	1			
Other	I 0.0	I 0.0	I 0.0	I 100.0	I	I	I 1
	I 0.0	I 0.0	I 0.0	I 100.0	I	I	I 5.0
	I 0.0	I 0.0	I 0.0	I 5.0	I	I	I
	I	I	I	I	I	I	I
Column Totals	I 9	I 2	I 8	I 1	I	I	I 20
	I 45.0	I 10.0	I 40.0	I 5.0	I	I	I 100.0

Chi square = 34.69
Degrees of freedom = 9

Valid cases = 20
Missing cases = 4
Response rate = 83.3 %

Caution: 16 cells contain an expected frequency less than 5

- - - - BY - - - - planned incentive - (X Axis)
 - - - - planned approach - (Y Axis)

Number	I	I	I	I	I	I
Row %	I	I	I	I	I	I
Column %	I	I	I	I	I	I
Total %	I	I	I	I	I	I
	Monetary	Contractual	Monetary and Contractual	Other	Row Totals	
<hr/>						
Prize	I 7	I 0	I 1	I 1	I	
	I 77.8	I 0.0	I 11.1	I 11.1	I	9
	I 87.5	I 0.0	I 12.5	I 100.0	I	47.4
	I 36.8	I 0.0	I 5.3	I 5.3	I	
<hr/>						
Commission	I 1	I 1	I 0	I 0	I	
	I 50.0	I 50.0	I 0.0	I 0.0	I	2
	I 12.5	I 50.0	I 0.0	I 0.0	I	10.5
	I 5.3	I 5.3	I 0.0	I 0.0	I	
<hr/>						
Prize and Commission	I 0	I 1	I 7	I 0	I	
	I 0.0	I 12.5	I 87.5	I 0.0	I	8
	I 0.0	I 50.0	I 87.5	I 0.0	I	42.1
	I 0.0	I 5.3	I 36.8	I 0.0	I	
<hr/>						
Column Totals	I 8	I 2	I 8	I 1	I	19
	I 42.1	I 10.5	I 42.1	I 5.3	I	100.0

Chi square = 17.97
 Degrees of freedom = 6

Valid cases = 19
 Missing cases = 5
 Response rate = 79.2 %

Caution: 12 cells contain an expected frequency less than 5

- - - - BY - - - - actual incentive - (X Axis)
 - - - - actual approach - (Y Axis)

Number	I	I	I	I	I	I
Row %	I	I	I	I	I	I
Column %	I	I	I	I	I	I
Total %	I	I	I	I	I	I
	Monetary	Contractual	Monetary and Contractual	Other	Row Totals	
Prize	7	0	0	1		
	87.5	0.0	0.0	12.5		8
	70.0	0.0	0.0	100.0		34.8
	30.4	0.0	0.0	4.3		
Commission	1	3	0	0		
	25.0	75.0	0.0	0.0		4
	10.0	100.0	0.0	0.0		17.4
	4.3	13.0	0.0	0.0		
Prize and Commission	2	0	9	0		
	18.2	0.0	81.8	0.0		11
	20.0	0.0	100.0	0.0		47.8
	8.7	0.0	39.1	0.0		
Column Totals	10	3	9	1		23
	43.5	13.0	39.1	4.3		100.0

Chi square = 31.44
 Degrees of freedom = 6

Valid cases = 23
 Missing cases = 1
 Response rate = 95.8 %

Caution: 12 cells contain an expected frequency less than 5

planned incentive - (X Axis)
 - - - - BY - - - -
 planned structure - (Y Axis)

Number Row % Column % Total %	I I I I	I I I I	I I I I	I I I I	I I I I	I I I I	I I I I
	Monetary	Contract- ual	Monetary and Con- tractual	Other			Row Totals
	I-----	I-----	I-----	I-----	I-----	I-----	I-----
	I 4	I 1	I 3	I 1	I	I	I
Open One Stage	I 44.4	I 11.1	I 33.3	I 11.1	I	I	I 9
	I 50.0	I 50.0	I 37.5	I 100.0	I	I	I 47.4
	I 21.1	I 5.3	I 15.8	I 5.3	I	I	I
	I-----	I-----	I-----	I-----	I-----	I-----	I-----
	I 2	I 0	I 4	I 0	I	I	I
Open Two Stage	I 33.3	I 0.0	I 66.7	I 0.0	I	I	I 6
	I 25.0	I 0.0	I 50.0	I 0.0	I	I	I 31.6
	I 10.5	I 0.0	I 21.1	I 0.0	I	I	I
	I-----	I-----	I-----	I-----	I-----	I-----	I-----
	I 2	I 0	I 1	I 0	I	I	I
Restricted	I 66.7	I 0.0	I 33.3	I 0.0	I	I	I 3
	I 25.0	I 0.0	I 12.5	I 0.0	I	I	I 15.8
	I 10.5	I 0.0	I 5.3	I 0.0	I	I	I
	I-----	I-----	I-----	I-----	I-----	I-----	I-----
	I 0	I 0	I 0	I 0	I	I	I
Charrette	I 0.0	I 0.0	I 0.0	I 0.0	I	I	I 0
	I 0.0	I 0.0	I 0.0	I 0.0	I	I	I 0.0
	I 0.0	I 0.0	I 0.0	I 0.0	I	I	I
	I-----	I-----	I-----	I-----	I-----	I-----	I-----
	I 0	I 1	I 0	I 0	I	I	I
Invited	I 0.0	I 100.0	I 0.0	I 0.0	I	I	I 1
	I 0.0	I 50.0	I 0.0	I 0.0	I	I	I 5.3
	I 0.0	I 5.3	I 0.0	I 0.0	I	I	I
	I-----	I-----	I-----	I-----	I-----	I-----	I-----
Column Totals	I 8	I 2	I 8	I 1	I	I	I 19
	I 42.1	I 10.5	I 42.1	I 5.3	I	I	I 100.0

Chi square = 12.13
 Degrees of freedom = 9

Valid cases = 19
 Missing cases = 5
 Response rate = 79.2 %

Caution: 16 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

actual incentive - (X Axis)

actual structure - (Y Axis)

Number Row % Column % Total %	I Monetary	I Contract- ual	I Monetary and Con- tractual	I Other	I Row Totals
Open One Stage	I 6 I 50.0 I 60.0 I 26.1	I 0 I 0.0 I 0.0 I 0.0	I 5 I 41.7 I 55.6 I 21.7	I 1 I 8.3 I 100.0 I 4.3	I I 12 I 52.2 I
Open Two Stage	I 1 I 12.5 I 10.0 I 4.3	I 3 I 37.5 I 100.0 I 13.0	I 4 I 50.0 I 44.4 I 17.4	I 0 I 0.0 I 0.0 I 0.0	I I 8 I 34.8 I
Restricted	I 3 I 100.0 I 30.0 I 13.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I I 3 I 13.0 I
Charrette	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I I 0 I 0.0 I
Invited	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I 0 I 0.0 I 0.0 I 0.0	I I 0 I 0.0 I
Column Totals	I 10 I 43.5	I 3 I 13.0	I 9 I 39.1	I 1 I 4.3	I 23 I 100.0

Chi square = 12.06
Degrees of freedom = 6

Valid cases = 23
Missing cases = 1
Response rate = 95.8 %

Caution: 11 cells contain an expected frequency less than 5
Note: 2 rows not included in Chi square calculations

- - - - - BY - - - - - planned incentive - (X Axis)
 planned area of design concern - (Y Axis)

Number	I	I	I	I	I	I
Row %	I	I	I	I	I	I
Column %	I	I	I	I	I	I
Total %	I	I	I	I	I	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 2	I 0	I 0	I 0	I 0	I
Idea	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 2
	I 25.0	I 0.0	I 0.0	I 0.0	I 0.0	I 10.5
	I 10.5	I 0.0	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 4	I 0	I 2	I 0	I 0	I
Plan	I 66.7	I 0.0	I 33.3	I 0.0	I 0.0	I 6
	I 50.0	I 0.0	I 25.0	I 0.0	I 0.0	I 31.6
	I 21.1	I 0.0	I 10.5	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 2	I 2	I 6	I 1	I 1	I
Project	I 18.2	I 18.2	I 54.5	I 9.1	I 11	I
	I 25.0	I 100.0	I 75.0	I 100.0	I 57.9	I
	I 10.5	I 10.5	I 31.6	I 5.3	I	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
Column	I 8	I 2	I 8	I 1	I 19	I
Totals	I 42.1	I 10.5	I 42.1	I 5.3	I 100.0	I

Chi square = 7.48
 Degrees of freedom = 6

Valid cases = 19
 Missing cases = 5
 Response rate = 79.2 %

Caution: 12 cells contain an expected frequency less than 5

actual incentive - (X Axis)

BY

actual area of design concern - (Y Axis)

Number	I	I	I	I	I
Row %	I	I	I	I	I
Column %	I	I	I	I	I
Total %	I	I	I	I	I
	I	I	I	I	I
Idea	I 1	I 0	I 0	I 0	I 1
	I 100.0	I 0.0	I 0.0	I 0.0	I 4.3
	I 10.0	I 0.0	I 0.0	I 0.0	I 4.3
	I 4.3	I 0.0	I 0.0	I 0.0	I 4.3
	I	I	I	I	I
Plan	I 5	I 0	I 1	I 0	I 6
	I 83.3	I 0.0	I 16.7	I 0.0	I 26.1
	I 50.0	I 0.0	I 11.1	I 0.0	I 26.1
	I 21.7	I 0.0	I 4.3	I 0.0	I 26.1
	I	I	I	I	I
Project	I 4	I 3	I 8	I 1	I 16
	I 25.0	I 18.8	I 50.0	I 6.3	I 69.6
	I 40.0	I 100.0	I 88.9	I 100.0	I 69.6
	I 17.4	I 13.0	I 34.8	I 4.3	I 69.6
	I	I	I	I	I
Column	I 10	I 3	I 9	I 1	I 23
Totals	I 43.5	I 13.0	I 39.1	I 4.3	I 100.0

Chi square = 7.58
Degrees of freedom = 6

Valid cases = 23
Missing cases = 1
Response rate = 95.8 %

Caution: 10 cells contain an expected frequency less than 5

- - - - - BY - - - - - planned incentive - (X Axis)
 ranked no. of entrants - (Y Axis)

Number	I	I	I	Monetary	I	I
Row %	I	I	I	and	I	I
Column %	I	Monetary	I	Contract-	I	Other
Total %	I	I	I	ual	I	I
	I	I	I	I	I	I
	I	1	I	0	I	3
High	I	25.0	I	0.0	I	75.0
	I	11.1	I	0.0	I	37.5
	I	5.0	I	0.0	I	15.0
	I	4	I	1	I	5
Medium	I	40.0	I	10.0	I	50.0
	I	44.4	I	50.0	I	62.5
	I	20.0	I	5.0	I	25.0
	I	4	I	1	I	0
Low	I	66.7	I	16.7	I	0.0
	I	44.4	I	50.0	I	0.0
	I	20.0	I	5.0	I	0.0
Column	I	9	I	2	I	8
Totals	I	45.0	I	10.0	I	40.0

Chi square = 7.91
 Degrees of freedom = 6

Valid cases = 20
 Missing cases = 4
 Response rate = 83.3 %

Caution: 12 cells contain an expected frequency less than 5

- - - - BY - - - - actual incentive - (X Axis)
 ranked no. of entrants - (Y Axis)

Number	I	I	I	Monetary	I	I	I
Row %	I	I	I	and	I	I	I
Column %	I Monetary	I Contract-	I Contract-	I Other	I	I	I
Total %	I	I ual	I ual	I	I	I	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
High	I 0	I 2	I 2	I 0	I	I	I
	I 0.0	I 50.0	I 50.0	I 0.0	I	I 4	I
	I 0.0	I 66.7	I 25.0	I 0.0	I	I 19.0	I
	I 0.0	I 9.5	I 9.5	I 0.0	I	I	I
Medium	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 5	I 0	I 5	I 0	I	I	I
	I 50.0	I 0.0	I 50.0	I 0.0	I	I 10	I
	I 55.6	I 0.0	I 62.5	I 0.0	I	I 47.6	I
Low	I 23.8	I 0.0	I 23.8	I 0.0	I	I	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 4	I 1	I 1	I 1	I	I	I
	I 57.1	I 14.3	I 14.3	I 14.3	I	I 7	I
Column	I 44.4	I 33.3	I 12.5	I 100.0	I	I 33.3	I
	I 19.0	I 4.8	I 4.8	I 4.8	I	I	I
Totals	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 9	I 3	I 8	I 1	I	I 21	I
	I 42.9	I 14.3	I 38.1	I 4.8	I	I 100.0	I

Chi square	= 10.72	Valid cases	= 21
Degrees of freedom	= 6	Missing cases	= 3
		Response rate	= 87.5 %

Caution: 12 cells contain an expected frequency less than 5

planned value of award - (X Axis)
 - - - - BY - - - -
 actual value of award - (Y Axis)

Number	I	I	I	I				
Row %	I	I	I	I				
Column %	I	I	I	I				
Total %	I	High	I	Medium	I	Low	I	Row Totals
	I		I		I		I	
	I	2	I	1	I	0	I	
	I	66.7	I	33.3	I	0.0	I	3
	I	100.0	I	10.0	I	0.0	I	17.6
High	I	11.8	I	5.9	I	0.0	I	
	I		I		I		I	
	I	0	I	8	I	0	I	
	I	0.0	I	100.0	I	0.0	I	8
	I	0.0	I	80.0	I	0.0	I	47.1
Medium	I	0.0	I	47.1	I	0.0	I	
	I		I		I		I	
	I	0	I	1	I	5	I	
	I	0.0	I	16.7	I	83.3	I	6
	I	0.0	I	10.0	I	100.0	I	35.3
Low	I	0.0	I	5.9	I	29.4	I	
	I		I		I		I	
Column	I	2	I	10	I	5	I	17
Totals	I	11.8	I	58.8	I	29.4	I	100.0

Chi square	=	22.95	Valid cases	=	17
Degrees of freedom	=	4	Missing cases	=	7
			Response rate	=	70.8%

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - - planned value of award - (X Axis)
 - - - - planned approach - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I High	I Medium	I Low	I Row
Total %	I	I	I	I Totals

Prize	I	0	I 4	I 3
	I	0.0	I 57.1	I 42.9
	I	0.0	I 40.0	I 75.0
	I	0.0	I 25.0	I 18.8

Commission	I	1	I 2	I 0
	I	33.3	I 66.7	I 0.0
	I	50.0	I 20.0	I 0.0
	I	6.3	I 12.5	I 0.0

Prize and Commission	I	1	I 4	I 1
	I	16.7	I 66.7	I 16.7
	I	50.0	I 40.0	I 25.0
	I	6.3	I 25.0	I 6.3

Column	I	2	I 10	I 4
Totals	I	12.5	I 62.5	I 25.0
				I 100.0

Chi square = 3.86
 Degrees of freedom = 4

Valid cases = 16
 Missing cases = 8
 Response rate = 66.7 %

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - - actual value of award - (X Axis)
 - - - - actual approach - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals

Prize	I 1	I 3	I 4	I
	I 12.5	I 37.5	I 50.0	I 8
	I 20.0	I 25.0	I 66.7	I 34.8
	I 4.3	I 13.0	I 17.4	I

Commission	I 1	I 1	I 2	I
	I 25.0	I 25.0	I 50.0	I 4
	I 20.0	I 8.3	I 33.3	I 17.4
	I 4.3	I 4.3	I 8.7	I

Prize and Commission	I 3	I 8	I 0	I
	I 27.3	I 72.7	I 0.0	I 11
	I 60.0	I 66.7	I 0.0	I 47.8
	I 13.0	I 34.8	I 0.0	I

Column	I 5	I 12	I 6	I 23
Totals	I 21.7	I 52.2	I 26.1	I 100.0

Chi square = 7.77
 Degrees of freedom = 4

Valid cases = 23
 Missing cases = 1
 Response rate = 95.8 %

Caution: 8 cells contain an expected frequency less than 5

planned value of award - (X Axis)
 - - - - BY - - - -
 planned structure - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
	I	I	I	I
	I	I	I	I
Open One Stage	I 11.1	I 77.8	I 11.1	I 9
	I 50.0	I 70.0	I 25.0	I 56.3
	I 6.3	I 43.8	I 6.3	I
	I	I	I	I
Open Two Stage	I 0.0	I 3	I 1	I
	I 0.0	I 75.0	I 25.0	I 4
	I 0.0	I 30.0	I 25.0	I 25.0
	I 0.0	I 18.8	I 6.3	I
	I	I	I	I
Restricted	I 0.0	I 0	I 2	I
	I 0.0	I 0.0	I 100.0	I 2
	I 0.0	I 0.0	I 50.0	I 12.5
	I 0.0	I 0.0	I 12.5	I
	I	I	I	I
Charrette	I 0.0	I 0	I 0	I
	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
	I	I	I	I
Invited	I 1	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 1
	I 50.0	I 0.0	I 0.0	I 6.3
	I 6.3	I 0.0	I 0.0	I
	I	I	I	I
Column	I 2	I 10	I 4	I 16
Totals	I 12.5	I 62.5	I 25.0	I 100.0

Chi square = 14.64
 Degrees of freedom = 6

Valid cases = 16
 Missing cases = 8
 Response rate = 66.7 %

Caution: 11 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

- - - - BY - - - - actual value of award - (X Axis)
 actual structure - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals
Open One Stage	I 2	I 8	I 2	I
	I 16.7	I 66.7	I 16.7	I 12
	I 40.0	I 66.7	I 33.3	I 52.2
	I 8.7	I 34.8	I 8.7	I
Open Two Stage	I 3	I 3	I 2	I
	I 37.5	I 37.5	I 25.0	I 8
	I 60.0	I 25.0	I 33.3	I 34.8
	I 13.0	I 13.0	I 8.7	I
Restricted	I 0	I 1	I 2	I
	I 0.0	I 33.3	I 66.7	I 3
	I 0.0	I 8.3	I 33.3	I 13.0
	I 0.0	I 4.3	I 8.7	I
Charrette	I 0	I 0	I 0	I
	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
Invited	I 0	I 0	I 0	I
	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
Column	I 5	I 12	I 6	I 23
Totals	I 21.7	I 52.2	I 26.1	I 100.0

Chi square = 5.03
 Degrees of freedom = 4

Valid cases = 23
 Missing cases = 1
 Response rate = 95.8 %

Caution: 8 cells contain an expected frequency less than 5
 Note: 2 rows not included in Chi square calculations

- - - - - planned value of award - (X Axis)
 BY - - - - - planned area of design concern - (Y Axis)

Number	I		I		I		I
Row %	I		I		I		I
Column %	I		I		I		I
Total %	I	High	I	Medium	I	Low	I
	I		I		I		I
	I	0	I	1	I	1	I
Idea	I	0.0	I	50.0	I	50.0	I
	I	0.0	I	10.0	I	25.0	I
	I	0.0	I	6.3	I	6.3	I
	I		I		I		I
	I	0	I	3	I	2	I
Plan	I	0.0	I	60.0	I	40.0	I
	I	0.0	I	30.0	I	50.0	I
	I	0.0	I	18.8	I	12.5	I
	I		I		I		I
	I	2	I	6	I	1	I
Project	I	22.2	I	66.7	I	11.1	I
	I	100.0	I	60.0	I	25.0	I
	I	12.5	I	37.5	I	6.3	I
	I		I		I		I
Column	I	2	I	10	I	4	I
Totals	I	12.5	I	62.5	I	25.0	I

Chi square = 3.28
 Degrees of freedom = 4

Valid cases = 16
 Missing cases = 8
 Response rate = 66.7 %

Caution: 8 cells contain an expected frequency less than 5

- - - - - BY - - - - - actual value of award - (X Axis)
 actual area of design concern - (Y Axis)

Number	I		I		I		I
Row %	I		I		I		I
Column %	I		I		I		I
Total %	I	High	I	Medium	I	Low	I
	I		I		I		I
	I	0	I	0	I	1	I
Idea	I	0.0	I	0.0	I	100.0	I
	I	0.0	I	0.0	I	16.7	I
	I	0.0	I	0.0	I	4.3	I
	I		I		I		I
	I	0	I	4	I	2	I
Plan	I	0.0	I	66.7	I	33.3	I
	I	0.0	I	33.3	I	33.3	I
	I	0.0	I	17.4	I	8.7	I
	I		I		I		I
	I	5	I	8	I	3	I
Project	I	31.3	I	50.0	I	18.8	I
	I	100.0	I	66.7	I	50.0	I
	I	21.7	I	34.8	I	13.0	I
	I		I		I		I
Column	I	5	I	12	I	6	I
Totals	I	21.7	I	52.2	I	26.1	I

Chi square = 5.51
 Degrees of freedom = 4

Valid cases = 23
 Missing cases = 1
 Response rate = 95.8 %

Caution: 8 cells contain an expected frequency less than 5

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Author	Title	Year	Volume	Page
Smith, J.	History of the United States	1850	1	100
Johnson, W.	History of the United States	1850	2	200
Johnson, W.	History of the United States	1850	3	300
Johnson, W.	History of the United States	1850	4	400
Johnson, W.	History of the United States	1850	5	500
Johnson, W.	History of the United States	1850	6	600
Johnson, W.	History of the United States	1850	7	700
Johnson, W.	History of the United States	1850	8	800
Johnson, W.	History of the United States	1850	9	900
Johnson, W.	History of the United States	1850	10	1000

THE UNIVERSITY OF CHICAGO
LIBRARY

THE UNIVERSITY OF CHICAGO
LIBRARY

planned value of award - (X Axis)

- - - - BY - - - -

ranked no. of entrants - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
High	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Medium	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Low	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Column	I	I	I	I
Totals	I	I	I	I

Chi square = 3.79
Degrees of freedom = 4

Valid cases = 17
Missing cases = 7
Response rate = 70.8%

Caution: 9 cells contain an expected frequency less than 5

actual value of award - (X Axis)

- - - - BY - - - -

ranked no. of entrants - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals
High	2	0	2	4
	50.0	0.0	50.0	19.0
	40.0	0.0	33.3	
	9.5	0.0	9.5	
Medium	2	7	1	10
	20.0	70.0	10.0	47.6
	40.0	70.0	16.7	
	9.5	33.3	4.8	
Low	1	3	3	7
	14.3	42.9	42.9	33.3
	20.0	30.0	50.0	
	4.8	14.3	14.3	
Column Totals	5	10	6	21
	23.8	47.6	28.6	100.0

Chi square = 6.81 Valid cases = 21
 Degrees of freedom = 4 Missing cases = 3
 Response rate = 87.5%

Caution: 9 cells contain an expected frequency less than 5

1. *Handwritten title or header*
 2. *Handwritten subtitle or header*

<i>Handwritten header 1</i>	<i>Handwritten header 2</i>	<i>Handwritten header 3</i>	<i>Handwritten header 4</i>	<i>Handwritten header 5</i>
<i>Handwritten data 1.1</i>	<i>Handwritten data 1.2</i>	<i>Handwritten data 1.3</i>	<i>Handwritten data 1.4</i>	<i>Handwritten data 1.5</i>
<i>Handwritten data 2.1</i>	<i>Handwritten data 2.2</i>	<i>Handwritten data 2.3</i>	<i>Handwritten data 2.4</i>	<i>Handwritten data 2.5</i>
<i>Handwritten data 3.1</i>	<i>Handwritten data 3.2</i>	<i>Handwritten data 3.3</i>	<i>Handwritten data 3.4</i>	<i>Handwritten data 3.5</i>
<i>Handwritten data 4.1</i>	<i>Handwritten data 4.2</i>	<i>Handwritten data 4.3</i>	<i>Handwritten data 4.4</i>	<i>Handwritten data 4.5</i>
<i>Handwritten data 5.1</i>	<i>Handwritten data 5.2</i>	<i>Handwritten data 5.3</i>	<i>Handwritten data 5.4</i>	<i>Handwritten data 5.5</i>

3. *Handwritten text line 1*
 4. *Handwritten text line 2*

Handwritten footer or concluding text

planned total value of awards - (X Axis)

- - - - BY - - - -

actual total value of awards - (Y Axis)

Number	I		I		I		I
Row %	I		I		I		I
Column %	I		I		I		I
Total %	I	High	I	Medium	I	Low	I
	I		I		I		I
	I	3	I	2	I	0	I
	I	60.0	I	40.0	I	0.0	I
	I	100.0	I	18.2	I	0.0	I
High	I	15.8	I	10.5	I	0.0	I
	I		I		I		I
	I	0	I	8	I	0	I
	I	0.0	I	100.0	I	0.0	I
	I	0.0	I	72.7	I	0.0	I
Medium	I	0.0	I	42.1	I	0.0	I
	I		I		I		I
	I	0	I	1	I	5	I
	I	0.0	I	16.7	I	83.3	I
	I	0.0	I	9.1	I	100.0	I
Low	I	0.0	I	5.3	I	26.3	I
	I		I		I		I
Column	I	3	I	11	I	5	I
Totals	I	15.8	I	57.9	I	26.3	I

Chi square = 23.72
Degrees of freedom = 4

Valid cases = 19
Missing cases = 5
Response rate = 79.2%

Caution: 9 cells contain an expected frequency less than 5

planned total value of awards - (X Axis)

planned approach - (Y Axis)

Number	I	I	I	I	
Row %	I	I	I	I	
Column %	I	I	I	I	Row
Total %	I	I	I	I	Totals
	I	I	I	I	I
	I	I	I	I	I
Prize	I	I	I	I	I
	I	I	I	I	I
	I	I	I	I	I
	I	I	I	I	I
	I	I	I	I	I
Commission	I	I	I	I	I
	I	I	I	I	I
	I	I	I	I	I
	I	I	I	I	I
	I	I	I	I	I
Prize and	I	I	I	I	I
Commission	I	I	I	I	I
	I	I	I	I	I
Column	I	I	I	I	I
Totals	I	I	I	I	I

Chi square = 7.4
Degrees of freedom = 4

Valid cases = 17
Missing cases = 7
Response rate = 70.8 %

Caution: 9 cells contain an expected frequency less than 5

1. Introduction 2. Methodology 3. Results 4. Discussion 5. Conclusion

Year	2010	2011	2012	2013	2014
Q1	1.2	1.5	1.8	2.1	2.4
Q2	1.5	1.8	2.1	2.4	2.7
Q3	1.8	2.1	2.4	2.7	3.0
Q4	2.1	2.4	2.7	3.0	3.3
Q5	2.4	2.7	3.0	3.3	3.6
Q6	2.7	3.0	3.3	3.6	3.9
Q7	3.0	3.3	3.6	3.9	4.2
Q8	3.3	3.6	3.9	4.2	4.5
Q9	3.6	3.9	4.2	4.5	4.8
Q10	3.9	4.2	4.5	4.8	5.1

The data shows a steady increase in the number of cases over the ten-year period, with a slight dip in the fifth year. The overall trend is positive, indicating a growing number of cases over time.

The data is presented in a clear and concise manner, making it easy to understand the trends and patterns. The use of a table allows for a detailed comparison of the data across different years and quarters.

planned total value of awards - (X Axis)
 - - - - BY - - - -
 planned structure - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
	I	I	I	I
	I	I	I	I
Open One Stage	I 1	I 6	I 2	I
	I 11.1	I 66.7	I 22.2	I 9
	I 25.0	I 60.0	I 50.0	I 50.0
	I 5.6	I 33.3	I 11.1	I
	I	I	I	I
	I	I	I	I
Open Two Stage	I 2	I 3	I 1	I
	I 33.3	I 50.0	I 16.7	I 6
	I 50.0	I 30.0	I 25.0	I 33.3
	I 11.1	I 16.7	I 5.6	I
	I	I	I	I
	I	I	I	I
Restricted	I 0	I 1	I 1	I
	I 0.0	I 50.0	I 50.0	I 2
	I 0.0	I 10.0	I 25.0	I 11.1
	I 0.0	I 5.6	I 5.6	I
	I	I	I	I
	I	I	I	I
Charrette	I 0	I 0	I 0	I
	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
	I	I	I	I
	I	I	I	I
Invited	I 1	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 1
	I 25.0	I 0.0	I 0.0	I 5.6
	I 5.6	I 0.0	I 0.0	I
	I	I	I	I
Column	I 4	I 10	I 4	I 18
Totals	I 22.2	I 55.6	I 22.2	I 100.0

Chi square = 5.8
 Degrees of freedom = 6

Valid cases = 18
 Missing cases = 6
 Response rate = 75.0 %

Caution: 11 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

Page 1 Date: 10/10/2019
 Name: [illegible]

Q. No.	1	2	3	4
Q.1	1	2	3	4
Q.2	1	2	3	4
Q.3	1	2	3	4
Q.4	1	2	3	4
Q.5	1	2	3	4
Q.6	1	2	3	4
Q.7	1	2	3	4
Q.8	1	2	3	4
Q.9	1	2	3	4
Q.10	1	2	3	4

Signature: [illegible]
 Date: 10/10/2019

Teacher's Signature: [illegible]
 Date: 10/10/2019

- - - - BY - - - - actual total value of awards - (X Axis)
 actual structure - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals
-----I-----I-----I-----I-----				
Open One Stage	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Open Two Stage	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Restricted	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Charrette	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Invited	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
-----I-----I-----I-----I-----				
Column	I	I	I	I
Totals	I	I	I	I

Chi square = 6.34
 Degrees of freedom = 4

Valid cases = 23
 Missing cases = 1
 Response rate = 95.8 %

Caution: 8 cells contain an expected frequency less than 5
 Note: 2 rows not included in Chi square calculations

1. Name of the person or organization
 2. Address
 3. City
 4. State
 5. Zip

No.	Name	Address	City	State	Zip
1	John Doe	123 Main St	New York	NY	10001
2	Jane Smith	456 Elm St	Los Angeles	CA	90001
3	Bob Johnson	789 Oak St	Chicago	IL	60601
4	Alice Brown	101 Pine St	San Francisco	CA	94101
5	Charlie Davis	202 Cedar St	Philadelphia	PA	19101
6	Eve White	303 Birch St	San Diego	CA	92101
7	Frank Green	404 Maple St	Seattle	WA	98101
8	Grace Black	505 Walnut St	Portland	OR	97201
9	Henry Gold	606 Spruce St	Denver	CO	80201
10	Ivy Silver	707 Ash St	Phoenix	AZ	85001

1. Name of the person or organization
 2. Address
 3. City
 4. State
 5. Zip

1. Name of the person or organization
 2. Address
 3. City
 4. State
 5. Zip

planned total value of awards - (X Axis)
 - - - - BY - - - -
 ranked no. of entrants - (Y Axis)

Number	I		I		I		I
Row %	I		I		I		I
Column %	I		I		I		I
Total %	I	High	I	Medium	I	Low	I
	I		I		I		I
	I	0	I	2	I	0	I
	I	0.0	I	100.0	I	0.0	I
	I	0.0	I	20.0	I	0.0	I
High	I	0.0	I	10.5	I	0.0	I
	I		I		I		I
	I	2	I	5	I	2	I
	I	25.0	I	55.6	I	22.2	I
	I	50.0	I	50.0	I	40.0	I
Medium	I	10.5	I	26.3	I	10.5	I
	I		I		I		I
	I	2	I	3	I	3	I
	I	22.2	I	37.5	I	37.5	I
	I	50.0	I	30.0	I	60.0	I
Low	I	10.5	I	15.8	I	15.8	I
	I		I		I		I
Column	I	4	I	10	I	5	I
Totals	I	21.1	I	52.6	I	26.3	I

Chi square	=	2.66	Valid cases	=	19
Degrees of freedom	=	4	Missing cases	=	5
			Response rate	=	79.2%

Caution: 9 cells contain an expected frequency less than 5

Teacher's Role		Student's Role		Parent's Role	
1. To provide a safe and supportive learning environment.	2. To assess and monitor student progress.	3. To participate in learning activities.	4. To provide feedback and support.	5. To provide resources and support.	6. To monitor and support their child's learning.
7. To collaborate with colleagues.	8. To engage in professional development.	9. To take responsibility for their learning.	10. To seek help when needed.	11. To provide a positive role model.	12. To support their child's learning at home.
13. To communicate effectively.	14. To be fair and honest.	15. To be respectful.	16. To be responsible.	17. To be supportive.	18. To be involved.
19. To be a leader.	20. To be a role model.	21. To be a learner.	22. To be a contributor.	23. To be a partner.	24. To be a supporter.

The teacher's role is to provide a safe and supportive learning environment, assess and monitor student progress, and collaborate with colleagues. The student's role is to participate in learning activities, provide feedback and support, and take responsibility for their learning. The parent's role is to provide resources and support, monitor and support their child's learning, and provide a positive role model.

The teacher's role is to provide a safe and supportive learning environment, assess and monitor student progress, and collaborate with colleagues. The student's role is to participate in learning activities, provide feedback and support, and take responsibility for their learning. The parent's role is to provide resources and support, monitor and support their child's learning, and provide a positive role model.

actual total value of awards - (X Axis)

- - - - BY - - - -

ranked no. of entrants - (Y Axis)

Number	I		I		I		I	
Row %	I		I		I		I	
Column %	I		I		I		I	Row
Total %	I	High	I	Medium	I	Low	I	Totals

	I	2	I	1	I	1	I	
	I	50.0	I	25.0	I	25.0	I	4
	I	28.6	I	16.7	I	12.5	I	19.0
High	I	9.5	I	4.8	I	4.8	I	

	I	3	I	5	I	2	I	
	I	30.0	I	50.0	I	20.0	I	10
	I	42.9	I	62.5	I	33.3	I	47.6
Medium	I	14.3	I	23.8	I	9.5	I	

	I	2	I	2	I	3	I	
	I	28.6	I	28.6	I	42.9	I	7
	I	28.6	I	25.0	I	50.0	I	33.3
Low	I	9.5	I	9.5	I	14.3	I	

Column	I	7	I	8	I	6	I	21
Totals	I	33.3	I	38.1	I	28.6	I	100.0

Chi square = 1.9
Degrees of freedom = 4

Valid cases = 21
Missing cases = 3
Response rate = 87.5%

Caution: 9 cells contain an expected frequency less than 5

UNITED STATES DEPARTMENT OF AGRICULTURE

OFFICE OF THE SECRETARY

State	County	City	Address	Telephone
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234
Alabama	Cherokee	Cherokee	Cherokee, Ala.	2-1234

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY

UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF THE SECRETARY

- - - - BY - - - - planned total value of awards - (X Axis)
 planned area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals
Idea	0	2	0	2
	0.0	100.0	0.0	10.5
	0.0	18.2	0.0	
	0.0	10.5	0.0	
Plan	0	1	4	5
	0.0	20.0	80.0	26.3
	0.0	9.1	100.0	
	0.0	5.3	21.1	
Project	4	8	0	12
	33.3	66.7	0.0	63.2
	100.0	72.7	0.0	
	21.1	42.1	0.0	
Column Totals	4	11	4	19
	21.1	57.9	21.1	100.0

Chi square = 15.54
 Degrees of freedom = 4

Valid cases = 19
 Missing cases = 5
 Response rate = 79.2 %

Caution: 8 cells contain an expected frequency less than 5

Figure 1. (a) Schematic diagram of the experimental setup. (b) Photograph of the experimental setup.

Figure 2. (a) Schematic diagram of the experimental setup. (b) Photograph of the experimental setup.

Sample	Time (s)	Distance (m)	Velocity (m/s)	Acceleration (m/s ²)
1	0.0	0.0	0.0	0.0
1	0.1	0.1	1.0	10.0
1	0.2	0.4	2.0	10.0
1	0.3	0.9	3.0	10.0
1	0.4	1.6	4.0	10.0
1	0.5	2.5	5.0	10.0
1	0.6	3.6	6.0	10.0
1	0.7	4.9	7.0	10.0
1	0.8	6.4	8.0	10.0
1	0.9	8.1	9.0	10.0
1	1.0	10.0	10.0	10.0
2	0.0	0.0	0.0	0.0
2	0.1	0.1	1.0	10.0
2	0.2	0.4	2.0	10.0
2	0.3	0.9	3.0	10.0
2	0.4	1.6	4.0	10.0
2	0.5	2.5	5.0	10.0
2	0.6	3.6	6.0	10.0
2	0.7	4.9	7.0	10.0
2	0.8	6.4	8.0	10.0
2	0.9	8.1	9.0	10.0
2	1.0	10.0	10.0	10.0

Figure 3. (a) Schematic diagram of the experimental setup. (b) Photograph of the experimental setup.

Figure 4. (a) Schematic diagram of the experimental setup. (b) Photograph of the experimental setup.

- - - - BY - - - - actual total value of awards - (X Axis)
 - - - - actual area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
Idea	0	1	0	1
	0.0	100.0	0.0	4.3
	0.0	10.0	0.0	
	0.0	4.3	0.0	
Plan	0	3	3	6
	0.0	50.0	50.0	26.1
	0.0	30.0	50.0	
	0.0	13.0	13.0	
Project	7	6	3	16
	43.8	37.5	18.8	69.6
	100.0	60.0	50.0	
	30.4	26.1	13.0	
Column Totals	7	10	6	23
	30.4	43.5	26.1	100.0

Chi square	= 5.89	Valid cases	= 23
Degrees of freedom	= 4	Missing cases	= 1
		Response rate	= 95.8

Caution: 8 cells contain an expected frequency less than 5

planned number of prizes - (X Axis)

actual number of prizes - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I	I	I	Row			
Row %	I	I	I	I	I	I	I	I	I	I	I	I	Totals			
Column %	I	I	I	I	I	I	I	I	I	I	I	I				
Total %	I	1	I	3	I	5	I	8	I	13	I	14	I	27	I	Totals
1	I	1	I	0	I	1	I	0	I	0	I	0	I	0	I	
	I	50.0	I	0.0	I	50.0	I	0.0	I	0.0	I	0.0	I	0.0	I	2
	I	100.0	I	0.0	I	14.3	I	0.0	I	0.0	I	0.0	I	0.0	I	11.8
	I	5.9	I	0.0	I	5.9	I	0.0	I	0.0	I	0.0	I	0.0	I	
2	I	0	I	1	I	0	I	0	I	0	I	0	I	0	I	
	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	1
	I	0.0	I	20.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	5.9
	I	0.0	I	5.9	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
3	I	0	I	2	I	0	I	0	I	0	I	0	I	0	I	
	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	2
	I	0.0	I	40.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	11.8
	I	0.0	I	11.8	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
5	I	0	I	1	I	3	I	0	I	0	I	0	I	0	I	
	I	0.0	I	25.0	I	75.0	I	0.0	I	0.0	I	0.0	I	0.0	I	4
	I	0.0	I	20.0	I	42.9	I	0.0	I	0.0	I	0.0	I	0.0	I	23.5
	I	0.0	I	5.9	I	17.6	I	0.0	I	0.0	I	0.0	I	0.0	I	
6	I	0	I	0	I	1	I	0	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I	1
	I	0.0	I	0.0	I	14.3	I	0.0	I	0.0	I	0.0	I	0.0	I	5.9
	I	0.0	I	0.0	I	5.9	I	0.0	I	0.0	I	0.0	I	0.0	I	
7	I	0	I	1	I	1	I	0	I	0	I	0	I	0	I	
	I	0.0	I	50.0	I	50.0	I	0.0	I	0.0	I	0.0	I	0.0	I	2
	I	0.0	I	20.0	I	14.3	I	0.0	I	0.0	I	0.0	I	0.0	I	11.8
	I	0.0	I	5.9	I	5.9	I	0.0	I	0.0	I	0.0	I	0.0	I	
8	I	0	I	0	I	0	I	1	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	1
	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	5.9
	I	0.0	I	0.0	I	0.0	I	5.9	I	0.0	I	0.0	I	0.0	I	
10	I	0	I	0	I	0	I	0	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
13	I	0	I	0	I	1	I	0	I	1	I	0	I	0	I	
	I	0.0	I	0.0	I	50.0	I	0.0	I	50.0	I	0.0	I	0.0	I	2
	I	0.0	I	0.0	I	14.3	I	0.0	I	100.0	I	0.0	I	0.0	I	11.8
	I	0.0	I	0.0	I	5.9	I	0.0	I	5.9	I	0.0	I	0.0	I	
14	I	0	I	0	I	0	I	0	I	0	I	1	I	0	I	
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I	1
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I	5.9
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
15	I	0	I	0	I	0	I	0	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
25	I	0	I	0	I	0	I	0	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
27	I	0	I	0	I	0	I	0	I	0	I	0	I	1	I	
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0	I	1
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0	I	5.9
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	5.9	I	
Column Totals	I	1	I	5	I	7	I	1	I	1	I	1	I	1	I	17
	I	5.9	I	29.4	I	41.2	I	5.9	I	5.9	I	5.9	I	5.9	I	100.0

Chi square = 75.28
Degrees of freedom = 54

Valid cases = 17
Missing cases = 7
Response rate = 70.8%

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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planned number of prizes - (X Axis)
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 ranked no. of entrants - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Total %	I	1	I	3	I	5	I	8	I	13	I	14	I	27	I
High	I	0	I	0	I	2	I	0	I	0	I	1	I	0	I
	I	0.0	I	0.0	I	66.7	I	0.0	I	0.0	I	33.3	I	0.0	I
	I	0.0	I	0.0	I	28.6	I	0.0	I	0.0	I	100.0	I	0.0	I
	I	0.0	I	0.0	I	11.8	I	0.0	I	0.0	I	5.9	I	0.0	I
	I	1	I	2	I	4	I	0	I	1	I	0	I	0	I
Medium	I	12.5	I	25.0	I	50.0	I	0.0	I	12.5	I	0.0	I	0.0	I
	I	100.0	I	40.0	I	57.1	I	0.0	I	100.0	I	0.0	I	0.0	I
	I	5.9	I	11.8	I	23.5	I	0.0	I	5.9	I		I	0.0	I
	I	0	I	3	I	1	I	1	I	0	I	0	I	1	I
	I	0.0	I	50.0	I	16.7	I	16.7	I	0.0	I	0.0	I	16.7	I
Low	I	0.0	I	60.0	I	14.3	I	100.0	I	0.0	I	0.0	I	100.0	I
	I	0.0	I	17.6	I	5.9	I	5.9	I	0.0	I	0.0	I	5.9	I
	I	1	I	5	I	7	I	1	I	1	I	1	I	1	I
Column Totals	I	5.9	I	29.4	I	41.2	I	5.9	I	5.9	I	5.9	I	5.9	I

Chi square	=	13.88	Valid cases	=	17
Degrees of freedom	=	12	Missing cases	=	7
			Response rate	=	70.8%

Caution: 21 cells contain an expected frequency less than 5

actual number of prizes - (X Axis)
 ranked no. of entrants - (Y Axis)

--- BY ---

Number Row % Column % Total %	1	2	3	5	6	7	8	10	13	14	15	25	27	Row Totals
High	1 25.0 50.0 4.8	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 25.0 100.0 4.8	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 25.0 100.0 4.8	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0
Medium	1 10.0 50.0 4.8	0 0.0 0.0 0.0	1 10.0 50.0 4.8	2 20.0 40.0 9.5	0 0.0 0.0 0.0	0 0.0 0.0 0.0	2 20.0 100.0 9.5	1 10.0 100.0 4.8	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0
Low	0 0.0 0.0 0.0	1 14.3 100.0 4.8	1 14.3 50.0 4.8	3 42.9 60.0 14.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 14.3 100.0 4.8	1 14.3 100.0 4.8
Column Totals	2 9.5	1 4.8	2 9.5	5 23.8	1 4.8	2 9.5	2 9.5	1 4.8	2 9.5	1 4.8	1 4.8	1 4.8	1 4.8	21 100.0

Chi square = 29.65
 Degrees of freedom = 24
 Valid cases = 21
 Missing cases = 3
 Response rate = 87.5%

Caution: 39 cells contain an expected frequency less than 5

1. The first part of the paper is devoted to the study of the

properties of the function $f(x)$ defined by the equation

$$f(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the study of the function $g(x)$ defined by the equation

$$g(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the study of the function $h(x)$ defined by the equation

$$h(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the study of the function $i(x)$ defined by the equation

$$i(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the study of the function $j(x)$ defined by the equation

$$j(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the study of the function $k(x)$ defined by the equation

$$k(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the study of the function $l(x)$ defined by the equation

$$l(x) = \int_0^x \frac{1}{1+t^2} dt$$

and to the study of the function $m(x)$ defined by the equation

$$m(x) = \int_0^x \frac{1}{1+t^2} dt$$

number of prizes - (X Axis)

- - - - BY - - - -

planned value of award - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	Row
Total %	I	1	I	3	I	5	I	8	I	13	I	14	I	27	I Totals
High	I	0	I	1	I	0	I	0	I	1	I	0	I	0	I
	I	0.0	I	50.0	I	0.0	I	0.0	I	50.0	I	0.0	I	0.0	I 2
	I	0.0	I	20.0	I	0.0	I	0.0	I	100.0	I	0.0	I	0.0	I 12.5
	I	0.0	I	6.3	I	0.0	I	0.0	I	6.3	I	0.0	I	0.0	I
	I	1	I	3	I	5	I	0	I	0	I	0	I	0	I
Medium	I	11.1	I	33.3	I	55.6	I	0.0	I	0.0	I	0.0	I	0.0	I 9
	I	100.0	I	60.0	I	71.4	I	0.0	I	0.0	I	0.0	I	0.0	I 56.3
	I	6.3	I	18.8	I	31.3	I	0.0	I	0.0	I	0.0	I	0.0	I
	I	0	I	1	I	2	I	1	I	0	I	0	I	1	I
Low	I	0.0	I	20.0	I	40.0	I	20.0	I	0.0	I	0.0	I	20.0	I 5
	I	0.0	I	20.0	I	28.6	I	100.0	I	0.0	I	0.0	I	100.0	I 31.3
	I	0.0	I	6.3	I	12.5	I	6.3	I	0.0	I	0.0	I	6.3	I
	I	1	I	5	I	7	I	1	I	1	I	0	I	1	I 16
Column Totals	I	6.3	I	31.3	I	43.8	I	6.3	I	6.3	I	0.0	I	6.3	I 100.0

Chi square = 13.79
Degrees of freedom = 10

Valid cases = 16
Missing cases = 8
Response rate = 66.7%

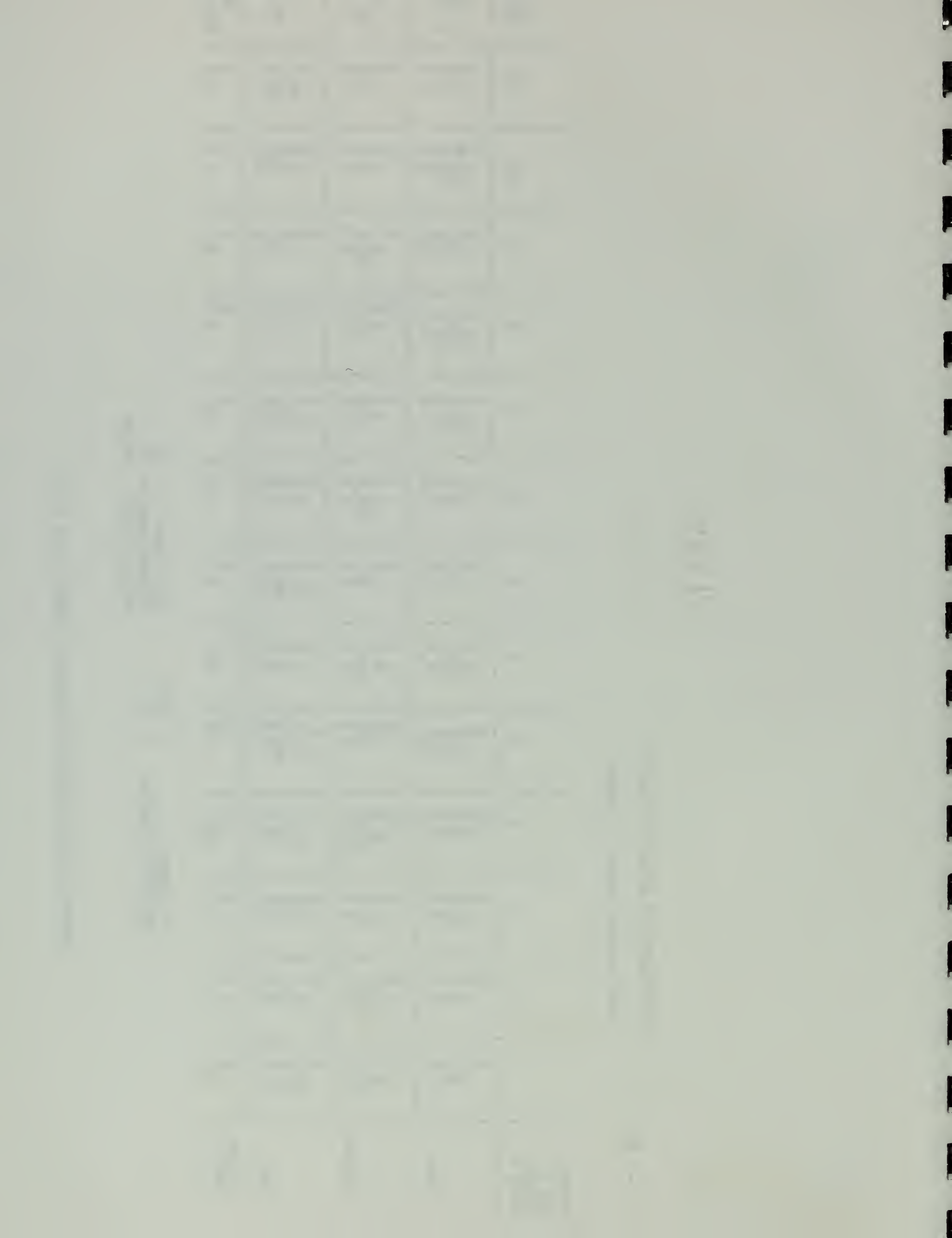
Caution: 18 cells contain an expected frequency less than 5
Note: 1 column not included in Chi square calculations

actual number of prizes - (X Axis)
actual value of award - (Y Axis)

Number Row % Column % Total %	1	2	3	5	6	7	8	10	13	14	15	25	27	Row Totals
High	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 20.0 50.0 4.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 20.0 50.0 4.3	1 20.0 50.0 4.3	0 0.0 0.0 0.0	1 20.0 100.0 4.3	1 20.0 100.0 4.3	0 0.0 0.0 0.0	1 20.0 100.0 4.3	0 0.0 0.0 0.0	5 21.7
Medium	1 8.3 50.0 4.3	3 25.0 100.0 4.3	1 8.3 50.0 4.3	6 50.0 85.7 26.1	0 0.0 0.0 0.0	1 8.3 50.0 4.3	1 8.3 50.0 4.3	0 0.0 0.0 0.0	1 8.3 100.0 4.3	0 0.0 0.0 0.0	1 8.3 100.0 4.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	12 52.2
Low	1 16.7 50.0 4.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 16.7 14.3 4.3	1 16.7 100.0 4.3	0 0.0 0.0 0.0	1 16.7 100.0 4.3	1 16.7 100.0 4.3	0 0.0 0.0 0.0	1 16.7 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 16.7 100.0 4.3	6 26.1
Column Totals	2 8.7	1 4.3	2 8.7	7 30.4	1 4.3	2 8.7	1 4.3	1 4.3	2 8.7	1 4.3	1 4.3	1 4.3	1 4.3	23 100.0

Chi square = 27.46
Degrees of freedom = 24
Valid cases = 23
Missing cases = 1
Response rate = 95.8%

Caution: 39 cells contain an expected frequency less than 5



planned amount of fee - (X Axis)

- - - - BY - - - -

actual amount of fee - (Y Axis)

Number	I	I	I	I	I	I	I	
Row %	I	I	I	I	I	I	I	
Column %	I	I	I	I	I	I	Row	
Total %	I	High	I	Medium	I	Low	I	Totals
High	I	2	I	2	I	0	I	
	I	50.0	I	50.0	I	0.0	I	4
	I	100.0	I	25.0	I	0.0	I	21.1
	I	10.5	I	10.5	I	0.0	I	
	I	0	I	6	I	1	I	
Medium	I	0.0	I	85.7	I	14.3	I	7
	I	0.0	I	75.0	I	11.1	I	36.8
	I	0.0	I	31.6	I	5.3	I	
	I	0	I	0	I	8	I	
Low	I	0.0	I	0.0	I	100.0	I	8
	I	0.0	I	0.0	I	88.9	I	42.1
	I	0.0	I	0.0	I	42.1	I	
	I	2	I	8	I	9	I	19
Column Totals	I	10.5	I	42.1	I	47.4	I	100.0

Chi square = 22.27
Degrees of freedom = 4

Valid cases = 19
Missing cases = 5
Response rate = 79.2%

Caution: 9 cells contain an expected frequency less than 5

THE UNIVERSITY OF CHICAGO

NAME	AGE	SEX	HEIGHT	WEIGHT	HAIR	EYES
JOHN	25	M	5'10"	175	BROWN	BROWN
MARY	22	F	5'5"	120	BLOND	BLUE
JOHN	28	M	6'0"	190	BLACK	BROWN
MARY	24	F	5'8"	140	BROWN	GREEN
JOHN	30	M	6'2"	200	BLACK	BROWN
MARY	26	F	5'6"	130	BLOND	BLUE
JOHN	32	M	6'4"	210	BLACK	BROWN
MARY	28	F	5'9"	150	BROWN	GREEN
JOHN	34	M	6'6"	220	BLACK	BROWN
MARY	30	F	5'11"	160	BLOND	BLUE

planned amount of fee - (X Axis)
 - - - - BY - - - -
 planned structure - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
	I-----I	I-----I	I-----I	I-----I
	I 1	I 3	I 4	I
	I 12.5	I 37.5	I 50.0	I 8
Open One Stage	I 50.0	I 37.5	I 57.1	I 47.1
	I 5.9	I 17.6	I 23.5	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 4	I 1	I
	I 0.0	I 80.0	I 20.0	I 5
Open Two Stage	I 0.0	I 50.0	I 14.3	I 29.4
	I 0.0	I 23.5	I 5.9	I
	I-----I	I-----I	I-----I	I-----I
	I 1	I 0	I 2	I
	I 33.3	I 0.0	I 66.7	I 3
Restricted	I 50.0	I 0.0	I 28.6	I 17.6
	I 5.9	I 0.0	I 11.8	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 0	I
	I 0.0	I 0.0	I 0.0	I 0
Charrette	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 1	I 0	I
	I 0.0	I 100.0	I 0.0	I 1
Invited	I 0.0	I 12.5	I 0.0	I 5.9
	I 0.0	I 5.9	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
Column	I 2	I 8	I 7	I 17
Totals	I 11.8	I 47.1	I 41.2	I 100.0

Chi square = 6.79
 Degrees of freedom = 6

Valid cases = 17
 Missing cases = 7
 Response rate = 70.8 %

Caution: 12 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

- - - - - BY - - - - - actual amount of fee - (X Axis)
 actual structure - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
	I-----	I-----	I-----	I-----
	I 1	I 4	I 6	I
Open One Stage	I 9.1	I 36.4	I 54.5	I 11
	I 16.7	I 57.1	I 75.0	I 52.4
	I 4.8	I 19.0	I 28.6	I
	I-----	I-----	I-----	I-----
	I 4	I 3	I 0	I
Open Two Stage	I 57.1	I 42.9	I 0.0	I 7
	I 66.7	I 42.9	I 0.0	I 33.3
	I 19.0	I 14.3	I 0.0	I
	I-----	I-----	I-----	I-----
	I 1	I 0	I 2	I
Restricted	I 33.3	I 0.0	I 66.7	I 3
	I 16.7	I 0.0	I 25.0	I 14.3
	I 4.8	I 0.0	I 9.5	I
	I-----	I-----	I-----	I-----
	I 0	I 0	I 0	I
Charrette	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
	I-----	I-----	I-----	I-----
	I 0	I 0	I 0	I
Invited	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
	I-----	I-----	I-----	I-----
Column	I 6	I 7	I 8	I 21
Totals	I 28.6	I 33.3	I 38.1	I 100.0

Chi square = 8.79
 Degrees of freedom = 4

Valid cases = 21
 Missing cases = 3
 Response rate = 87.5 %

Caution: 9 cells contain an expected frequency less than 5
 Note: 2 rows not included in Chi square calculations

Date		Description		Amount	
1900	Jan 1	Balance		100.00	
	Feb 1	Received from A		50.00	
	Mar 1	Received from B		75.00	
	Apr 1	Received from C		125.00	
	May 1	Received from D		150.00	
	Jun 1	Received from E		200.00	
	Jul 1	Received from F		250.00	
	Aug 1	Received from G		300.00	
	Sep 1	Received from H		350.00	
	Oct 1	Received from I		400.00	
	Nov 1	Received from J		450.00	
	Dec 1	Received from K		500.00	
	Total			2500.00	

Total Received: 2500.00
 Total Paid: 0.00
 Balance: 2500.00

- - - - BY - - - - planned amount of fee - (X Axis)
 planned approach - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
Prize	I	I	I	I
	1	3	5	9
	11.1	33.3	55.6	52.9
	50.0	42.9	62.5	
	5.9	17.6	29.4	
Commission	I	I	I	I
	1	0	0	1
	100.0	0.0	0.0	5.9
	50.0	0.0	0.0	
	5.9	0.0	0.0	
Prize and Commission	I	I	I	I
	0	4	3	7
	0.0	57.1	42.9	41.2
	0.0	57.1	37.5	
	0.0	23.5	17.6	
Column Totals	I	I	I	I
	2	7	8	17
	11.8	41.2	47.1	100.0

Chi square = 9.05 Valid cases = 17
 Degrees of freedom = 4 Missing cases = 7
 Response rate = 70.8 %

Caution: 9 cells contain an expected frequency less than 5

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

NAME		DATE	
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

- - - - BY - - - - actual amount of fee - (X Axis)
 - - - - actual approach - (Y Axis)

Number	I		I		I		I
Row %	I		I		I		I
Column %	I		I		I		I Row
Total %	I	High	I	Medium	I	Low	I Totals

Prize	I	0	I	2	I	6	I
	I	0.0	I	25.0	I	75.0	I 8
	I	0.0	I	28.6	I	75.0	I 38.1
	I	0.0	I	9.5	I	28.6	I

Commission	I	1	I	2	I	0	I
	I	33.3	I	66.7	I	0.0	I 3
	I	16.7	I	28.6	I	0.0	I 14.3
	I	4.8	I	9.5	I	0.0	I

Prize and Commission	I	5	I	3	I	2	I
	I	50.0	I	30.0	I	20.0	I 10
	I	83.3	I	42.9	I	25.0	I 47.6
	I	23.8	I	14.3	I	9.5	I

Column	I	6	I	7	I	8	I 21
Totals	I	28.6	I	33.3	I	38.1	I 100.0

Chi square = 9.97
 Degrees of freedom = 4

Valid cases = 21
 Missing cases = 3
 Response rate = 87.5 %

Caution: 9 cells contain an expected frequency less than 5

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY

DATE	NAME	SCORE
10/1/50	JOHN D. COLE	100
10/2/50	JOHN D. COLE	100
10/3/50	JOHN D. COLE	100
10/4/50	JOHN D. COLE	100
10/5/50	JOHN D. COLE	100
10/6/50	JOHN D. COLE	100
10/7/50	JOHN D. COLE	100
10/8/50	JOHN D. COLE	100
10/9/50	JOHN D. COLE	100
10/10/50	JOHN D. COLE	100
10/11/50	JOHN D. COLE	100
10/12/50	JOHN D. COLE	100
10/13/50	JOHN D. COLE	100
10/14/50	JOHN D. COLE	100
10/15/50	JOHN D. COLE	100
10/16/50	JOHN D. COLE	100
10/17/50	JOHN D. COLE	100
10/18/50	JOHN D. COLE	100
10/19/50	JOHN D. COLE	100
10/20/50	JOHN D. COLE	100
10/21/50	JOHN D. COLE	100
10/22/50	JOHN D. COLE	100
10/23/50	JOHN D. COLE	100
10/24/50	JOHN D. COLE	100
10/25/50	JOHN D. COLE	100
10/26/50	JOHN D. COLE	100
10/27/50	JOHN D. COLE	100
10/28/50	JOHN D. COLE	100
10/29/50	JOHN D. COLE	100
10/30/50	JOHN D. COLE	100
10/31/50	JOHN D. COLE	100

JOHN D. COLE
10/1/50

- - - - BY - - - - planned amount of fee - (X Axis)
 - - - - planned area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
	I-----I	I-----I	I-----I	I-----I
	I 0	I 2	I 0	I
Idea	I 0.0	I 100.0	I 0.0	I 2
	I 0.0	I 22.2	I 0.0	I 10.5
	I 0.0	I 10.5	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 1	I 1	I 5	I
Plan	I 14.3	I 14.3	I 71.4	I 7
	I 50.0	I 11.1	I 62.5	I 36.8
	I 5.3	I 5.3	I 26.3	I
	I-----I	I-----I	I-----I	I-----I
	I 1	I 6	I 3	I
Project	I 10.0	I 60.0	I 30.0	I 10
	I 50.0	I 66.7	I 37.5	I 52.6
	I 5.3	I 31.6	I 15.8	I
	I-----I	I-----I	I-----I	I-----I
Column	I 2	I 9	I 8	I 19
Totals	I 10.5	I 47.4	I 42.1	I 100.0

Chi square = 6.05
 Degrees of freedom = 4

Valid cases = 19
 Missing cases = 5
 Response rate = 79.2 %

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - - actual amount of fee - (X Axis)
 actual area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
	I-----I	I-----I	I-----I	I-----I
	I 0	I 1	I 0	I
Idea	I 0.0	I 100.0	I 0.0	I 1
	I 0.0	I 14.3	I 0.0	I 4.8
	I 0.0	I 4.8	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 1	I 1	I 4	I
Plan	I 16.7	I 16.7	I 66.7	I 6
	I 16.7	I 14.3	I 50.0	I 28.6
	I 4.8	I 4.8	I 19.0	I
	I-----I	I-----I	I-----I	I-----I
	I 5	I 5	I 4	I
Project	I 35.7	I 35.7	I 28.6	I 14
	I 83.3	I 71.4	I 50.0	I 66.7
	I 23.8	I 23.8	I 19.0	I
	I-----I	I-----I	I-----I	I-----I
Column	I 6	I 7	I 8	I 21
Totals	I 28.6	I 33.3	I 38.1	I 100.0

Chi square = 4.69
 Degrees of freedom = 4

Valid cases = 21
 Missing cases = 3
 Response rate = 87.5 %

Caution: 8 cells contain an expected frequency less than 5

- - - - BY - - - -

Number	I	I	I	I	I	I	I	
Row %	I	I	I	I	I	I	I	
Column %	I	I	I	I	I	I	Row	
Total %	I	High	I	Medium	I	Low	I	Totals
	I		I		I		I	
	I	2	I	0	I	2	I	
	I	0.0	I	0.0	I	100.0	I	2
	I	0.0	I	0.0	I	25.0	I	11.1
High	I	0.0	I	0.0	I	11.1	I	
	I		I		I		I	
	I	2	I	4	I	4	I	
	I	20.0	I	40.0	I	40.0	I	10
	I	100.0	I	50.0	I	50.0	I	55.6
Medium	I	11.1	I	22.2	I	22.2	I	
	I		I		I		I	
	I	0	I	4	I	2	I	
	I	0.0	I	66.7	I	33.3	I	6
	I	0.0	I	50.0	I	25.0	I	33.3
Low	I	0.0	I	22.2	I	11.1	I	
	I		I		I		I	
Column	I	2	I	8	I	8	I	18
Totals	I	11.1	I	44.4	I	44.4	I	100.0

Valid cases = 18
Missing cases = 6
Response rate = 75.0%

56

- - - - BY - - - - actual amount of fee - (X Axis)
 ranked no. of entrants - (Y Axis)

Number	I	I	I	I	I	I
Row %	I	I	I	I	I	I
Column %	I	I	I	I	I	I
Total %	I	I	I	I	I	I
	High	Medium	Low	Totals		
High	2	2	0	4	21.1	
	50.0	50.0	0.0			
	33.3	33.3	0.0			
	10.5	10.5	0.0			
Medium	4	3	3	10	52.6	
	40.0	30.0	30.0			
	66.7	50.0	42.9			
	21.1	15.8	15.8			
Low	0	1	4	5	26.3	
	0.0	20.0	80.0			
	0.0	16.7	57.1			
	0.0	5.3	21.1			
Column Totals	6	6	7	19		
	31.6	31.6	26.8	100.0		

Chi square = 7.01 Valid cases = 19
 Degrees of freedom = 4 Missing cases = 5
 Response rate = 79.2%

Caution: 9 cells contain an expected frequency less than 5

planned types of publicity - (X Axis)

- - - - Bī - - - -

actual types of publicity - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Total %	I	0	I	1	I	2	I	3	I	4	I	5	I	6	I	10
Row Totals	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
0	I	1	I	0	I	0	I	0	I	0	I	0	I	0	I	0
	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	12.5	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	4.2	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
1	I	0	I	0	I	1	I	0	I	0	I	0	I	1	I	0
	I	0.0	I	0.0	I	50.0	I	0.0	I	0.0	I	0.0	I	50.0	I	0.0
	I	0.0	I	0.0	I	33.3	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0
	I	0.0	I	0.0	I	4.2	I	0.0	I	0.0	I	0.0	I	4.2	I	0.0
2	I	0	I	1	I	0	I	0	I	0	I	0	I	0	I	0
	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	0.0	I	25.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	0.0	I	4.2	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
3	I	1	I	1	I	0	I	1	I	1	I	0	I	0	I	0
	I	33.3	I	0.0	I	0.0	I	33.3	I	33.3	I	0.0	I	0.0	I	0.0
	I	12.5	I	0.0	I	0.0	I	25.0	I	50.0	I	0.0	I	0.0	I	0.0
	I	4.2	I	0.0	I	0.0	I	4.2	I	4.2	I	0.0	I	0.0	I	0.0
4	I	1	I	0	I	0	I	0	I	0	I	1	I	0	I	0
	I	50.0	I	0.0	I	0.0	I	0.0	I	0.0	I	50.0	I	0.0	I	0.0
	I	12.5	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I	0.0
	I	4.2	I	0.0	I	0.0	I	0.0	I	0.0	I	4.2	I	0.0	I	0.0
5	I	0	I	0	I	1	I	3	I	0	I	0	I	0	I	0
	I	20.0	I	0.0	I	20.0	I	60.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	12.5	I	0.0	I	33.3	I	75.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	4.2	I	0.0	I	4.2	I	12.5	I	0.0	I	0.0	I	0.0	I	0.0
6	I	4	I	0	I	0	I	0	I	1	I	0.0	I	0.0	I	0.0
	I	80.0	I	0.0	I	0.0	I	0.0	I	20.0	I	0.0	I	0.0	I	0.0
	I	50.0	I	0.0	I	0.0	I	0.0	I	50.0	I	0.0	I	0.0	I	0.0
	I	16.7	I	0.0	I	0.0	I	0.0	I	4.2	I	0.0	I	0.0	I	0.0
7	I	0	I	3	I	1	I	0	I	0	I	0	I	0	I	0
	I	0.0	I	75.0	I	25.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	0.0	I	75.0	I	33.3	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	0.0	I	12.5	I	4.2	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
8	I	0	I	0	I	0	I	0	I	0	I	0	I	1	I	1
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	4.2
Column Totals	I	8	I	4	I	3	I	4	I	2	I	1	I	1	I	1
	I	33.3	I	16.7	I	12.5	I	16.7	I	8.3	I	4.2	I	4.2	I	4.2
	I		I		I		I		I		I		I		I	100.0

Chi square = 85.99
Degrees of freedom = 56

Valid cases = 24
Missing cases = 0
Response rate = 100.0%

Caution: 72 cells contain an expected frequency less than 5

- - - - BY - - - -

planned publicity value - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Total %	I	0	I	1	I	2	I	3	I	4	I	5	I	6	I	10
	I		I		I		I		I		I		I		I	Row Totals
High	I	2	I	1	I	1	I	0	I	0	I	0	I	0	I	0
	I	40.0	I	20.0	I	20.0	I	20.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	25.0	I	25.0	I	33.3	I	25.0	I	0.0	I	0.0	I	0.0	I	0.0
	I	9.5	I	4.8	I	4.8	I	4.8	I	0.0	I	0.0	I	0.0	I	0.0
	I		I		I		I		I		I		I		I	
Medium	I	1	I	0	I	0	I	3	I	0	I	0	I	0	I	1
	I	20.0	I	0.0	I	0.0	I	60.0	I	0.0	I	0.0	I	0.0	I	20.0
	I	12.5	I	0.0	I	0.0	I	75.0	I	0.0	I	0.0	I	0.0	I	100.0
	I	4.8	I	0.0	I	0.0	I	14.3	I	0.0	I	0.0	I	0.0	I	4.8
	I		I		I		I		I		I		I		I	
Low	I	5	I	3	I	2	I	0	I	1	I	0	I	0	I	0
	I	45.5	I	27.3	I	18.2	I	0.0	I	9.1	I	0.0	I	0.0	I	0.0
	I	62.5	I	75.0	I	66.7	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0
	I	23.8	I	14.3	I	9.5	I	0.0	I	4.8	I	0.0	I	0.0	I	0.0
	I		I		I		I		I		I		I		I	
Column Totals	I	8	I	4	I	3	I	4	I	1	I	0	I	0	I	1
	I	38.1	I	19.0	I	14.3	I	19.0	I	4.8	I	0.0	I	0.0	I	4.8

Chi square = 13.49
Degrees of freedom = 10

Valid cases = 21
Missing cases = 3
Response rate = 87.5%

Caution: 18 cells contain an expected frequency less than 5
Note: 2 columns not included in Chi square calculations

- - - - BY - - - -

actual publicity value - (Y Axis)

Chi square	= 5.15	Valid cases	= 8
Degrees of freedom	= 3	Missing cases	= 16
		Response rate	= 33.3%

Caution: 8 cells contain an expected frequency less than 5
Note: 5 columns & 1 row not included in Chi square calculations

planned total value of awards - (X Axis)

- - - - BY - - - -

planned types of publicity - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals
0	1 14.3 25.0 5.0	3 42.9 27.3 15.0	3 42.9 60.0 15.0	7 35.0
1	0 0.0 0.0 0.0	2 66.7 18.2 10.0	1 33.3 20.0 5.0	0 3 15.0
2	1 33.3 25.0 5.0	2 66.7 18.2 10.0	0 0.0 0.0 0.0	3 15.0
3	1 25.0 25.0 5.0	2 50.0 18.2 10.0	1 25.0 20.0 5.0	4 20.0
4	1 100.0 25.0 5.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 5.0
5	0 0.0 0.0 0.0	1 100.0 9.1 5.0	0 0.0 0.0 0.0	1 5.0
6	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0
10	0 0.0 0.0 0.0	1 100.0 9.1 5.0	0 0.0 0.0 0.0	1 5.0
Column Totals	4 20.0	11 55.0	5 25.0	20 100.0

Chi square = 8.74
Degrees of freedom = 12

Valid cases = 20
Missing cases = 4
Response rate = 83.3%

Caution: 21 cells contain an expected frequency less than 5
Note: 1 row not included in Chi square calculations

actual total value of awards - (X Axis)

- - - - BY - - - -

actual types of publicity - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
0	0	1	0	1
	0.0	100.0	0.0	4.3
	0.0	10.0	0.0	
	0.0	4.3	0.0	
1	2	0	0	2
	100.0	0.0	0.0	8.7
	28.6	0.0	0.0	
	8.7	0.0	0.0	
2	0	1	0	1
	0.0	100.0	0.0	4.3
	0.0	10.0	0.0	
	0.0	4.3	0.0	
3	0	2	0	2
	0.0	100.0	0.0	8.7
	0.0	20.0	0.0	
	0.0	8.7	0.0	
4	0	1	1	2
	0.0	50.0	50.0	8.7
	0.0	10.0	16.7	
	0.0	4.3	4.3	
5	2	1	2	5
	40.0	20.0	40.0	21.7
	28.6	10.0	33.3	
	8.7	4.3	8.7	
6	2	2	1	5
	40.0	40.0	20.0	21.7
	28.6	20.0	16.7	
	8.7	8.7	4.3	
7	1	2	1	4
	25.0	50.0	25.0	17.4
	14.3	20.0	16.7	
	4.3	8.7	4.3	
8	0	0	1	1
	0.0	0.0	100.0	4.3
	0.0	0.0	16.7	
	0.0	0.0	4.3	
Column Totals	7	10	6	23
	30.4	43.5	26.1	100.0

Chi square = 15.14
Degrees of freedom = 16

Valid cases = 23
Missing cases = 1
Response rate = 95.8%

Caution: 27 cells contain an expected frequency less than 5

planned publicity value - (X Axis)
 - - - - BY - - - -
 actual publicity value - (Y Axis)

Number	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I
Total %	I	I	I	I	I	I	I
	High	Medium	Low	Totals			
High	0	0	0	0	0	0.0	0.0
	0.0	0.0	0.0	0.0	0	0.0	0.0
	0.0	0.0	0.0	0.0	0	0.0	0.0
	0.0	0.0	0.0	0.0	0	0.0	0.0
Medium	1	1	1	1	3	33.3	42.9
	33.3	33.3	33.3	33.3	3	50.0	42.9
	50.0	50.0	33.3	33.3	4	14.3	42.9
	14.3	14.3	14.3	14.3	4	25.0	57.1
Low	1	1	2	1	4	50.0	57.1
	25.0	25.0	50.0	50.0	4	14.3	57.1
	50.0	50.0	66.7	66.7	4	14.3	57.1
	14.3	14.3	28.6	28.6	4	14.3	57.1
Column Totals	2	2	3	7	7	28.6	100.0
	28.6	28.6	42.9	100.0	7	28.6	100.0

Chi square = .19
 Degrees of freedom = 2
 Valid cases = 7
 Missing cases = 17
 Response rate = 29.2%

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

planned total value of awards - (X Axis)

- - - - BY - - - -

planned publicity value - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals

	I 0	I 3	I 2	I
	I 0.0	I 60.0	I 40.0	I 5
	I 0.0	I 30.0	I 40.0	I 27.8
High	I 0.0	I 16.7	I 11.1	I

	I 1	I 3	I 1	I
	I 20.0	I 60.0	I 20.0	I 5
	I 33.3	I 30.0	I 20.0	I 27.8
Medium	I 5.6	I 16.7	I 5.6	I

	I 2	I 4	I 2	I
	I 25.0	I 50.0	I 25.0	I 8
	I 66.7	I 40.0	I 40.0	I 44.4
Low	I 11.1	I 22.2	I 11.1	I

Column	I 3	I 5	I 10	I 18
Totals	I 16.7	I 27.8	I 55.6	I 100.0

Chi square = 1.49
Degrees of freedom = 4

Valid cases = 18
Missing cases = 6
Response rate = 75.0%

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - - actual total value of awards - (X Axis)
 actual publicity value - (Y Axis)

Number	I		I		I		I	
Row %	I		I		I		I	
Column %	I		I		I		I	Row
Total %	I	High	I	Medium	I	Low	I	Totals

	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	0.0	I	0
	I	0.0	I	0.0	I	0.0	I	0.0
High	I	0.0	I	0.0	I	0.0	I	

	I	0	I	2	I	1	I	
	I	0.0	I	66.7	I	33.3	I	3
	I	0.0	I	66.7	I	50.0	I	37.5
Medium	I	0.0	I	25.0	I	12.5	I	

	I	3	I	1	I	1	I	
	I	60.0	I	20.0	I	20.0	I	5
	I	100.0	I	33.3	I	50.0	I	62.5
Low	I	37.5	I	12.5	I	12.5	I	

Column	I	3	I	2	I	3	I	8
Totals	I	37.5	I	25.0	I	37.5	I	100.0

Chi square	=	3.02	Valid cases	=	8
Degrees of freedom	=	2	Missing cases	=	16
			Response rate	=	33.3%

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

planned publicity value - (X Axis)

- - - - BY - - - -

ranked no. of entrants - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
	I	I	I	I
	I	I	I	I
	I	I	I	I
High	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Medium	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Low	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Column Totals	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I

Chi square = 6.19
Degrees of freedom = 4

Valid cases = 19
Missing cases = 5
Response rate = 79.2%

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - -

ranked no. of entrants - (Y Axis)

Number	I	I	I	I				
Row %	I	I	I	I				
Column %	I	I	I	I				
Total %	I	High	I	Medium	I	Low	I	Row Totals
	I		I		I		I	
	I	0	I	2	I	1	I	
	I	0.0	I	66.7	I	33.3	I	3
	I	0.0	I	66.7	I	20.0	I	37.5
High	I	0.0	I	25.0	I	12.5	I	
	I		I		I		I	
	I	0	I	1	I	4	I	
	I	0.0	I	20.0	I	80.0	I	5
	I	0.0	I	33.3	I	80.0	I	62.5
Medium	I	0.0	I	12.5	I	50.0	I	
	I		I		I		I	
	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	0.0	I	0
	I	0.0	I	0.0	I	0.0	I	0.0
Low	I	0.0	I	0.0	I	0.0	I	
	I		I		I		I	
Column	I	0	I	3	I	5	I	8
Totals	I	0.0	I	37.5	I	62.5	I	100.0

Valid cases = 8
Missing cases = 16
Response rate = 33.3%

Caution: 4 cells contain an expected frequency less than 5
Note: 1 column & 1 row not included in Chi square calculations

planned total competition value - (X Axis)
 - - - - BY - - - -
 actual total competition value - (Y Axis)

Number	I		I		I		I
Row %	I		I		I		I
Column %	I		I		I		I
Total %	I	High	I	Medium	I	Low	I
	I		I		I		I
	I	3	I	0	I	0	I
	I	100.0	I	0.0	I	0.0	I
	I	100.0	I	0.0	I	0.0	I
High	I	37.5	I	0.0	I	0.0	I
	I		I		I		I
	I	0	I	4	I	0	I
	I	0.0	I	100.0	I	0.0	I
	I	0.0	I	100.0	I	0.0	I
Medium	I	0.0	I	50.0	I	0.0	I
	I		I		I		I
	I	0	I	0	I	1	I
	I	0.0	I	0.0	I	100.0	I
	I	0.0	I	0.0	I	100.0	I
Low	I	0.0	I	0.0	I	12.5	I
	I		I		I		I
Column	I	3	I	4	I	1	I
Totals	I	37.5	I	50.0	I	12.5	I

Chi square = 16
 Degrees of freedom = 4
 Valid cases = 8
 Missing cases = 0
 Response rate = 100.0%

Caution: 9 cells contain an expected frequency less than 5

- - - - BY - - - -

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I Idea	I Plan	I Project	I Row Totals
	I-----I-----I-----I-----			
	I 0 I 0 I 0 I			
Idea	I 0.0 I 0.0 I 0.0 I 0			
	I 0.0 I 0.0 I 0.0 I 0.0			
	I 0.0 I 0.0 I 0.0 I			
	I-----I-----I-----I-----			
	I 1 I 4 I 0 I			
Plan	I 20.0 I 80.0 I 0.0 I 5			
	I 100.0 I 100.0 I 0.0 I 62.5			
	I 12.5 I 50.0 I 0.0 I			
	I-----I-----I-----I-----			
	I 0 I 0 I 3 I			
Project	I 0.0 I 0.0 I 100.0 I 3			
	I 0.0 I 0.0 I 100.0 I 37.5			
	I 0.0 I 0.0 I 37.5 I			
	I-----I-----I-----I-----			
Column Totals	I 1 I 4 I 3 I 8			
	I 12.5 I 50.0 I 37.5 I 100.0			

Chi square = 8
Degrees of freedom = 2

```
Valid cases    = 8
Missing cases  = 0
Response rate  = 100.0 %
```

Caution: 6 cells contain an expected frequency less than 5
Note: 1 row not included in Chi square calculations

- - - - BY - - - - actual area of design concern - (X Axis)
 actual number of entrants - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I Idea	I Plan	I Project	I Row
Total %	I	I	I	I Totals
	I-----I	I-----I	I-----I	I-----I
	I 0	I 1	I 0	I
3	I 0.0	I 100.0	I 0.0	I 1
	I 0.0	I 20.0	I 0.0	I 12.5
	I 0.0	I 12.5	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 1	I 0	I
4	I 0.0	I 100.0	I 0.0	I 1
	I 0.0	I 20.0	I 0.0	I 12.5
	I 0.0	I 12.5	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 2	I
5	I 0.0	I 0.0	I 100.0	I 2
	I 0.0	I 0.0	I 66.7	I 25.0
	I 0.0	I 0.0	I 25.0	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 1	I 0	I
6	I 0.0	I 100.0	I 0.0	I 1
	I 0.0	I 20.0	I 0.0	I 12.5
	I 0.0	I 12.5	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 1	I 0	I
10	I 0.0	I 100.0	I 0.0	I 1
	I 0.0	I 20.0	I 0.0	I 12.5
	I 0.0	I 12.5	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 1	I
12	I 0.0	I 0.0	I 100.0	I 1
	I 0.0	I 0.0	I 33.3	I 12.5
	I 0.0	I 0.0	I 12.5	I
	I-----I	I-----I	I-----I	I-----I
	I 0	I 1	I 0	I
1500	I	I	I	I
	I 0.0	I 100.0	I 0.0	I 1
	I 0.0	I 20.0	I 0.0	I 12.5
	I 0.0	I 12.5	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
Column	I 0	I 5	I 3	I 8
Totals	I 0.0	I 62.5	I 37.5	I 100.0

Chi square = 7.99
 Degrees of freedom = 6

Valid cases = 8
 Missing cases = 0
 Response rate = 100.0 %

Caution: 14 cells contain an expected frequency less than 5
 Note: 1 column not included in Chi square calculations

- - - - - BY - - - - - planned approach - (X Axis)
 - - - - - actual approach - (Y Axis)

Number	I	I	I	Prize	I
Row %	I	I	I	and	I
Column %	I Prize	I Commis-	I	Commis-	I Row
Total %	I	I sion	I	sion	I Totals
	I-----I	I-----I	I-----I	I-----I	I-----I
	I 4	I 0	I 0	I	I
Prize	I 100.0	I 0.0	I 0.0	I 0.0	I 4
	I 100.0	I 0.0	I 0.0	I 0.0	I 57.1
	I 57.1	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 0	I	I
Commission	I 0.0	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 3	I	I
Prize and	I 0.0	I 0.0	I 100.0	I	I 3
Commission	I 0.0	I 0.0	I 100.0	I	I 42.9
	I 0.0	I 0.0	I 42.9	I	I
	I-----I	I-----I	I-----I	I-----I	I-----I
Column	I 4	I 0	I 3	I	I 7
Totals	I 57.1	I 0.0	I 42.9	I	I 100.0

Corrected Chi square = 3.51
 Degrees of freedom = 1

Valid cases = 7
 Missing cases = 1
 Response rate = 87.5 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 1 column & 1 row not included in Chi square calculations

actual approach - (X Axis)

- - - - BY - - - -

actual number of entrants - (Y Axis)

Number Row % Column % Total %	I I I I	I I I I	I I I I	Prize and Commis- sion	I I I I	ROW Totals
	I	I	I	I	I	I
3	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
4	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
5	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
6	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
10	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
12	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
1500	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
	I	I	I	I	I	I
Column Totals	I	I	I	I	I	I
	I	I	I	I	I	I

Chi square = 7.99
Degrees of freedom = 6

Valid cases = 8
Missing cases = 0
Response rate = 100.0 %

Caution: 14 cells contain an expected frequency less than 5
Note: 1 column not included in Chi square calculations

- - - - BY - - - - planned type of incentive - (X Axis)
 actual type of incentive - (Y Axis)

Number	I	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I	I
Column %	I Monetary	I Contract	I Monetary	I and	I Other	I	I	I
Total %	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I
	I 4	I 0	I 0	I 0	I 0	I 0	I 0	I 4
Monetary	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 80.0
	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 80.0
	I 80.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I	I	I	I	I	I	I	I
	I 0	I 0	I 0	I 0	I 0	I 0	I 0	I
Contractual	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I	I	I	I	I	I	I	I
	I 0	I 0	I 1	I 0	I 0	I 0	I 0	I
Monetary &	I 0.0	I 0.0	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 1
Contractual	I 0.0	I 0.0	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 20.0
	I 0.0	I 0.0	I 20.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I	I	I	I	I	I	I	I
	I 0	I 0	I 0	I 0	I 0	I 0	I 0	I
Other	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I	I	I	I	I	I	I	I
Column	I 4	I 0	I 1	I 0	I 0	I 0	I 0	I 5
Totals	I 80.0	I 0.0	I 20.0	I 0.0	I 0.0	I 0.0	I 0.0	I 100.0

Corrected Chi square = .7
 Degrees of freedom = 1

Valid cases = 5
 Missing cases = 3
 Response rate = 62.5 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 2 columns & 2 rows not included in Chi square calculations

- - - - BY - - - - planned type of incentive - (X Axis)
 - - - - planned approach - (Y Axis)

Number	I	I	I Monetary	I	I	I	I
Row %	I	I	I and	I	I	I	I
Column %	I Monetary	I Contract-	I Contract-	I	I Other	I	I Row
Total %	I	I ual	I ual	I	I	I	I Totals
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 3	I 0	I 0	I 0	I 0	I 0	I
Prize	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 3
	I 75.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 60.0
	I 60.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 0	I 0	I 0	I 0	I
Commission	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
	I 1	I 0	I 1	I 0	I 0	I 0	I
Prize and	I 50.0	I 0.0	I 50.0	I 0.0	I 0.0	I 0.0	I 2
Commission	I 25.0	I 0.0	I 100.0	I 0.0	I 0.0	I 0.0	I 40.0
	I 20.0	I 0.0	I 20.0	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I	I-----I
Column	I 4	I 0	I 1	I 0	I 0	I 0	I 5
Totals	I 80.0	I 0.0	I 20.0	I 0.0	I 0.0	I 0.0	I 100.0

Corrected Chi square = .05
 Degrees of freedom = 1

Valid cases = 5
 Missing cases = 3
 Response rate = 62.5 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 2 columns & 1 row not included in Chi square calculations

- - - - BY - - - - actual type of incentive - (X Axis)
 actual approach - (Y Axis)

Number	I	I	I	Monetary	I	I	I
Row %	I	Monetary	I	Contract-	I	and	I
Column %	I	I	I	ual	I	Contract	I
Total %	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	5	I	0	I	0	I
	I	100.0	I	0.0	I	0.0	I
Prize	I	83.3	I	0.0	I	0.0	I
	I	62.5	I	0.0	I	0.0	I
	I	I	I	I	I	I	I
	I	0	I	0	I	0	I
	I	0.0	I	0.0	I	0.0	I
Commission	I	0.0	I	0.0	I	0.0	I
	I	0.0	I	0.0	I	0.0	I
	I	I	I	I	I	I	I
	I	1	I	0	I	2	I
	I	33.3	I	0.0	I	66.7	I
Prize and	I	16.7	I	0.0	I	100.0	I
Commission	I	12.5	I	0.0	I	25.0	I
	I	I	I	I	I	I	I
	I	6	I	0	I	2	I
Column	I	75.0	I	0.0	I	25.0	I
Totals	I	I	I	I	I	I	I

Corrected Chi square = 1.6
 Degrees of freedom = 1

Valid cases = 8
 Missing cases = 0
 Response rate = 100.0 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 2 columns & 1 row not included in Chi square calculations

- - - - BY - - - - planned type of incentive - (X Axis)
 - - - - planned area of design concern - (Y Axis)

Number	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I
Column %	I Monetary	I Contract-	I Monetary	I and	I Other	I	I
Total %	I	I ual	I Contract-	I ual	I	I	I Row
	I	I	I	I	I	I	I Totals
	I	I	I	I	I	I	I
	I 1	I 0	I 0	I 0	I 0	I 0	I 1
Idea	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 1
	I 25.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 20.0
	I 20.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I	I	I	I	I	I	I
	I 2	I 0	I 1	I 0	I 0	I 0	I
	I 66.7	I 0.0	I 33.3	I 0.0	I 0.0	I 0.0	I 3
Plan	I 50.0	I 0.0	I 100.0	I 0.0	I 0.0	I 0.0	I 60.0
	I 40.0	I 0.0	I 20.0	I 0.0	I 0.0	I 0.0	I
	I	I	I	I	I	I	I
	I 1	I 0	I 0	I 0	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 1
Project	I 25.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I 20.0
	I 20.0	I 0.0	I 0.0	I 0.0	I 0.0	I 0.0	I
	I	I	I	I	I	I	I
Column	I 4	I 0	I 1	I 0	I 0	I 0	I 5
Totals	I 80.0	I 0.0	I 20.0	I 0.0	I 0.0	I 0.0	I 100.0

Chi square = .83
 Degrees of freedom = 2

Valid cases = 5
 Missing cases = 3
 Response rate = 62.5 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 2 columns not included in Chi square calculations

- - - - BY - - - - actual type of incentive - (X Axis)
 actual area of design concern - (Y Axis)

Number	I	I	I	I	I	I	I
Row %	I Monetary	I Contract-	I Monetary	I Other	I	I	I
Column %	I	I ual	I and	I	I	I	I
Total %	I	I	I Contract-	I	I	I	I
	I	I	I ual	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
Idea	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
Plan	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
Project	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
	I	I	I	I	I	I	I
Column	I	I	I	I	I	I	I
Totals	I	I	I	I	I	I	I

Corrected Chi square = .17
 Degrees of freedom = 1

Valid cases = 8
 Missing cases = 0
 Response rate = 100.0 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 2 columns & 1 row not included in Chi square calculations

actual type of incentive - (X Axis)

BY

actual number of entrants - (Y Axis)

Number Row % Column % Total %	Monetary	Contractual	Monetary and Contractual	Other	Row Totals
3	100.0	0.0	0.0	0.0	12.5
4	100.0	0.0	0.0	0.0	12.5
5	50.0	0.0	50.0	0.0	25.0
6	100.0	0.0	0.0	0.0	12.5
10	0.0	0.0	100.0	0.0	12.5
12	100.0	0.0	0.0	0.0	12.5
1500	100.0	0.0	0.0	0.0	12.5
Column Totals	6	0	2	0	8
	75.0	0.0	25.0	0.0	100.0

Chi square = 5.33
Degrees of freedom = 6

Valid cases = 8
Missing cases = 0
Response rate = 100.0 %

Caution: 14 cells contain an expected frequency less than 5
Note: 2 columns not included in Chi square calculations

- - - - BY - - - -

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
	2	0	0	
	100.0	0.0	0.0	2
	100.0	0.0	0.0	50.0
High	50.0	0.0	0.0	
	0	0	0	
	0.0	0.0	0.0	0
	0.0	0.0	0.0	0.0
Medium	0.0	0.0	0.0	
	0	0	2	
	0.0	0.0	100.0	2
	0.0	0.0	100.0	50.0
Low	0.0	0.0	50.0	
Column	2	0	2	4
Totals	50.0	0.0	50.0	100.0

Chi square = 1
Degrees of freedom = 1

Valid cases = 4
Missing cases = 4
Response rate = 50.0%

Caution: 4 cells contain an expected frequency less than 5

Note: 1 column & 1 row not included in Chi square calculations

TABLE I
 Summary of the results of the experiments

Run	Time (min)	Temp. (°C)	Pressure (mm Hg)	Yield (%)
1	10	100	1.0	100
2	20	100	1.0	100
3	30	100	1.0	100
4	40	100	1.0	100
5	50	100	1.0	100
6	60	100	1.0	100
7	70	100	1.0	100
8	80	100	1.0	100
9	90	100	1.0	100
10	100	100	1.0	100

TABLE II
 Summary of the results of the experiments

- - - - BY - - - - planned value of first place - (X Axis)
 - - - - planned approach - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals

Prize	I	I	I	I
	I 1	I 0	I 2	I
	I 33.3	I 0.0	I 66.7	I 3
	I 50.0	I 0.0	I 100.0	I 75.0
Commission	I	I	I	I
	I 25.0	I 0.0	I 50.0	I
	I	I	I	I
	I 0	I 0	I 0	I
Prize and Commission	I	I	I	I
	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I

Column Totals	I	I	I	I
	I 1	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 1
	I 50.0	I 0.0	I 0.0	I 25.0

Column Totals	I	I	I	I
	I 2	I 0	I 2	I 4

I 50.0 I 0.0 I 50.0 I 100.0				

Corrected Chi square = 0
 Degrees of freedom = 1

Valid cases = 4
 Missing cases = 4
 Response rate = 50.0 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 1 column & 1 row not included in Chi square calculations

- - - - BY - - - - actual value of first place - (X Axis)
 - - - - actual approach - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals

Prize	I	I	I	I
	I 1	I 0	I 3	I
	I 25.0	I 0.0	I 75.0	I 4
	I 50.0	I 0.0	I 100.0	I 57.1
Commission	I	I	I	I
	I 14.3	I 0.0	I 42.9	I
	I 0	I 0	I 0	I
	I 0.0	I 0.0	I 0.0	I 0
Prize and Commission	I	I	I	I
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
	I 1	I 2	I 0	I
Column Totals	I 33.3	I 66.7	I 0.0	I 3
	I 50.0	I 100.0	I 0.0	I 42.9
	I 14.3	I 28.6	I 0.0	I

Column Totals	I 2	I 2	I 3	I 7
Totals	I 28.6	I 28.6	I 42.9	I 100.0

Chi square	= 4.95	Valid cases	= 7
Degrees of freedom	= 2	Missing cases	= 1
		Response rate	= 87.5 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

actual value of first place - (X Axis)

- - - - BY - - - -

actual number of entrants - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals

3	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
4	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
5	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
6	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
10	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
12	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
1500	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Column	I	I	I	I
Totals	I	I	I	I

Chi square = 10.49
Degrees of freedom = 10

Valid cases = 7
Missing cases = 1
Response rate = 87.5 %

Caution: 18 cells contain an expected frequency less than 5
Note: 1 row not included in Chi square calculations

- - - - - BY - - - - - planned value of first place - (X Axis)
 planned area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
	I-----	I-----	I-----	I-----
Idea	I 1	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 1
	I 50.0	I 0.0	I 0.0	I 25.0
	I 25.0	I 0.0	I 0.0	I
	I-----	I-----	I-----	I-----
Plan	I 0	I 0	I 2	I
	I 0.0	I 0.0	I 100.0	I 2
	I 0.0	I 0.0	I 100.0	I 50.0
	I 0.0	I 0.0	I 50.0	I
	I-----	I-----	I-----	I-----
Project	I 1	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 1
	I 50.0	I 0.0	I 0.0	I 25.0
	I 25.0	I 0.0	I 0.0	I
	I-----	I-----	I-----	I-----
Column	I 2	I 0	I 2	I 4
Totals	I 50.0	I 0.0	I 50.0	I 100.0

Chi square = 4
 Degrees of freedom = 2

Valid cases = 4
 Missing cases = 4
 Response rate = 50.0 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 column not included in Chi square calculations

- - - - BY - - - - actual value of first place - (X Axis)
 actual area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
	I-----I	I-----I	I-----I	I-----I
	I 0	I 0	I 0	I
Idea	I 0.0	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
	I 1	I 1	I 3	I
Plan	I 20.0	I 20.0	I 60.0	I 5
	I 50.0	I 50.0	I 100.0	I 71.4
	I 14.3	I 14.3	I 42.9	I
	I-----I	I-----I	I-----I	I-----I
	I 1	I 1	I 0	I
Project	I 50.0	I 50.0	I 0.0	I 2
	I 50.0	I 50.0	I 0.0	I 28.6
	I 14.3	I 14.3	I 0.0	I
	I-----I	I-----I	I-----I	I-----I
Column	I 2	I 2	I 3	I 7
Totals	I 28.6	I 28.6	I 42.9	I 100.0

Chi square = 2.1
 Degrees of freedom = 2

Valid cases = 7
 Missing cases = 1
 Response rate = 87.5 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

- - - - BY - - - -

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
	I	I	I	I
	I 3	I 0	I 0	I
	I 100.0	I 0.0	I 0.0	I 3
	I 100.0	I 0.0	I 0.0	I 42.9
High	I 42.9	I 0.0	I 0.0	I
	I	I	I	I
	I 0	I 3	I 0	I
	I 0.0	I 100.0	I 0.0	I 3
	I 0.0	I 75.0	I 0.0	I 42.9
Medium	I 0.0	I 42.9	I 0.0	I
	I	I	I	I
	I 0	I 1	I 0	I
	I 0.0	I 100.0	I 0.0	I 1
	I 0.0	I 25.0	I 0.0	I 14.3
Low	I 0.0	I 14.3	I 0.0	I
	I	I	I	I
Column	I 3	I 4	I 0	I 7
Totals	I 42.9	I 57.1	I 0.0	I 100.0

Valid cases = 7
Missing cases = 1
Response rate = 87.5%

85

- - - - - BY - - - - - planned total awards value - (X Axis)
 - - - - - planned approach - (Y Axis)

Number	I		I		I		I
Row %	I		I		I		I
Column %	I		I		I		I
Total %	I	High	I	Medium	I	Low	I
	I		I		I		I
	I	2	I	2	I	0	I
Prize	I	50.0	I	50.0	I	0.0	I
	I	66.7	I	50.0	I	0.0	I
	I	28.6	I	28.6	I	0.0	I
	I		I		I		I
	I	0	I	0	I	0	I
Commission	I	0.0	I	0.0	I	0.0	I
	I	0.0	I	0.0	I	0.0	I
	I	0.0	I	0.0	I	0.0	I
	I		I		I		I
	I	1	I	2	I	0	I
Prize and	I	33.3	I	66.7	I	0.0	I
Commission	I	33.3	I	50.0	I	0.0	I
	I	14.3	I	28.6	I	0.0	I
	I		I		I		I
Column	I	3	I	4	I	0	I
Totals	I	42.9	I	57.1	I	0.0	I

Corrected Chi square = .1
 Degrees of freedom = 1

Valid cases = 7
 Missing cases = 1
 Response rate = 87.5 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 1 column & 1 row not included in Chi square calculations

- - - - - BY - - - - - actual total awards value - (X Axis)
 actual approach - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals

Prize	I	I	I	I
	2	2	0	
	50.0	50.0	0.0	4
	66.7	66.7	0.0	57.1
Commission	I	I	I	I
	28.6	28.6	0.0	
	0	0	0	0
	0.0	0.0	0.0	0.0
Prize and Commission	I	I	I	I
	0.0	0.0	0.0	
	1	1	1	3
	33.3	33.3	33.3	42.9
Column Totals	I	I	I	I
	3	3	1	7
	42.9	42.9	14.3	100.0

Chi square = 1.55
 Degrees of freedom = 2

Valid cases = 7
 Missing cases = 1
 Response rate = 87.5 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

actual total awards value - (X Axis)

- - - - BY - - - -

actual number of entrants - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals

3	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
4	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
5	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
6	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
10	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
12	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
1500	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Column	I	I	I	I
Totals	I	I	I	I

Chi square = 9.33
Degrees of freedom = 10

Valid cases = 7
Missing cases = 1
Response rate = 87.5 %

Caution: 18 cells contain an expected frequency less than 5
Note: 1 row not included in Chi square calculations

- - - - - BY - - - - - planned total awards value - (X Axis)
 planned area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I Row
Total %	I High	I Medium	I Low	I Totals
-----I-----I-----I-----I-----				
Idea	I	1	I	0
	I	100.0	I	0.0
	I	33.3	I	0.0
	I	14.3	I	0.0
-----I-----I-----I-----I-----				
Plan	I	1	I	3
	I	25.0	I	75.0
	I	33.3	I	75.0
	I	14.3	I	42.9
-----I-----I-----I-----I-----				
Project	I	1	I	1
	I	50.0	I	50.0
	I	33.3	I	25.0
	I	14.3	I	14.3
-----I-----I-----I-----I-----				
Column	I	3	I	4
Totals	I	42.9	I	57.1
	I		I	0
	I		I	7
	I		I	100.0

Chi square = 1.89
 Degrees of freedom = 2

Valid cases = 7
 Missing cases = 1
 Response rate = 87.5 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 column not included in Chi square calculations

actual total awards value - (X Axis)

- - - - BY - - - -

actual area of design concern - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals
Idea	0	0	0	0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
	0.0	0.0	0.0	0.0
Plan	2	3	0	5
	40.0	60.0	0.0	71.4
	66.7	100.0	0.0	
	28.6	42.9	0.0	
Project	1	0	1	2
	50.0	0.0	50.0	28.6
	33.3	0.0	100.0	
	14.3	0.0	14.3	
Column Totals	3	3	1	7
	42.9	42.9	14.3	100.0

Chi square = 3.73
Degrees of freedom = 2

Valid cases = 7
Missing cases = 1
Response rate = 87.5 %

Caution: 6 cells contain an expected frequency less than 5
Note: 1 row not included in Chi square calculations

planned number of prizes - (X Axis)
 - - - - BY - - - -
 actual number of prizes - (Y Axis)

Number	I	I	I
Row %	I	I	I
Column %	I	I	I
Total %	I	I	I
	1	6	Totals
	I	I	I
1	I 100.0	I 0.0	I 1
	I 100.0	I 0.0	I 33.3
	I 33.3	I 0.0	I
	I	I	I
3	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I
	I	I	I
4	I 0.0	I 0.0	I 0
	I 0.0	I 0.0	I 0.0
	I 0.0	I 0.0	I
	I	I	I
5	I 0.0	I 100.0	I 1
	I 0.0	I 50.0	I 33.3
	I 0.0	I 33.3	I
	I	I	I
6	I 0.0	I 100.0	I 1
	I 0.0	I 50.0	I 33.3
	I 0.0	I 33.3	I
	I	I	I
Column	I 1	I 2	I 3
Totals	I 33.3	I 66.7	I 100.0

Chi square = 2.99
 Degrees of freedom = 2

Valid cases = 3
 Missing cases = 5
 Response rate = 37.5 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 2 rows not included in Chi square calculations

actual number of prizes - (X Axis)

- - - - BY - - - -

actual number of entrants - (Y Axis)

Number	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I
Total %	I	I	I	I	I	I	I
	1	3	4	5	6		Row Totals
3	100.0	0.0	0.0	0.0	0.0	1	12.5
4	0.0	0.0	100.0	0.0	0.0	1	12.5
5	50.0	0.0	0.0	50.0	0.0	2	25.0
6	0.0	0.0	0.0	0.0	100.0	1	12.5
10	0.0	0.0	0.0	100.0	0.0	1	12.5
12	0.0	100.0	0.0	0.0	0.0	1	12.5
1500	0.0	0.0	0.0	100.0	0.0	1	12.5
Column Totals	2	1	1	3	1	8	100.0

Chi square = 28.66
Degrees of freedom = 24

Valid cases = 8
Missing cases = 0
Response rate = 100.0 %

Caution: 35 cells contain an expected frequency less than 5

- - - - BY - - - - planned number of prizes - (X Axis)
 - - - - planned value of first place - (Y Axis)

Number	I	I	I	
Row %	I	I	I	
Column %	I	I	I	Row
Total %	I	1	I	6
	I		I	Totals
	I	1	I	1
High	I	50.0	I	50.0
	I	100.0	I	50.0
	I	33.3	I	33.3
	I		I	
	I	0	I	1
Medium	I	0.0	I	100.0
	I	0.0	I	50.0
	I	0.0	I	33.3
	I		I	
	I	0	I	0
Low	I	0.0	I	0.0
	I	0.0	I	0.0
	I	0.0	I	0.0
	I		I	
Column	I	1	I	2
Totals	I	33.3	I	66.7
	I		I	3
	I		I	100.0

Corrected Chi square = .18
 Degrees of freedom = 1

Valid cases = 3
 Missing cases = 5
 Response rate = 37.5 %

Caution: 4 cells contain an expected frequency less than 5
 Note: 1 row not included in Chi square calculations

actual number of prizes - (X Axis)

BY

actual value of first place - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I	I	I	I	I
Total %	I	I	I	I	I	I	I	I	I	I	I
	1	3	4	5	6	Totals					
High	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
Medium	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
Low	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I
Column Totals	I	I	I	I	I	I	I	I	I	I	I
	I	I	I	I	I	I	I	I	I	I	I

Chi square = 4.27
Degrees of freedom = 6

Valid cases = 7
Missing cases = 1
Response rate = 87.5 %

ution: 12 cells contain an expected frequency less than 5
te: 1 column not included in Chi square calculations

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Date		Time		Temp.		Pressure		Remarks	
1	11	12	1	1	1	1	1	1	1
2	11	12	1	1	1	1	1	1	1
3	11	12	1	1	1	1	1	1	1
4	11	12	1	1	1	1	1	1	1
5	11	12	1	1	1	1	1	1	1
6	11	12	1	1	1	1	1	1	1
7	11	12	1	1	1	1	1	1	1
8	11	12	1	1	1	1	1	1	1
9	11	12	1	1	1	1	1	1	1
10	11	12	1	1	1	1	1	1	1

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types of publicity planned comp/results - (X Axis)

types of publicity used comp/results - (Y Axis)

Number	I	I	I	I	I	I	I	I	I
Row %	I	I	I	I	I	I	I	I	I
Column %	I	I	I	I	I	I	I	I	I
Total %	1	0	1	1	2	3	3	3	Row Totals
	I	I	I	I	I	I	I	I	I
3	I	0	I	0	I	0	I	1	I
	I	0.0	I	0.0	I	0.0	I	100.0	I 1
	I	0.0	I	0.0	I	0.0	I	50.0	I 14.3
	I	0.0	I	0.0	I	0.0	I	14.3	I
	I	I	I	I	I	I	I	I	I
4	I	1	I	0	I	0	I	1	I
	I	50.0	I	0.0	I	0.0	I	50.0	I 2
	I	33.3	I	0.0	I	0.0	I	50.0	I 28.6
	I	14.3	I	0.0	I	0.0	I	14.3	I
	I	I	I	I	I	I	I	I	I
6	I	1	I	0	I	0	I	0	I
	I	100.0	I	0.0	I	0.0	I	0.0	I 1
	I	33.3	I	0.0	I	0.0	I	0.0	I 14.3
	I	14.3	I	0.0	I	0.0	I	0.0	I
	I	I	I	I	I	I	I	I	I
7	I	1	I	1	I	0	I	0	I
	I	50.0	I	50.0	I	0.0	I	0.0	I 2
	I	33.3	I	100.0	I	0.0	I	0.0	I 28.6
	I	14.3	I	14.3	I	0.0	I	0.0	I
	I	I	I	I	I	I	I	I	I
8	I	0	I	0	I	1	I	0	I
	I	0.0	I	0.0	I	100.0	I	0.0	I 1
	I	0.0	I	0.0	I	100.0	I	0.0	I 14.3
	I	0.0	I	0.0	I	14.3	I	0.0	I
	I	I	I	I	I	I	I	I	I
Column Totals	I	3	I	1	I	1	I	2	I 7
	I	42.9	I	14.3	I	14.3	I	28.6	I 100.0

Chi square = 13.41
Degrees of freedom = 12

Valid cases = 7
Missing cases = 1
Response rate = 87.5 %

Caution: 20 cells contain an expected frequency less than 5

types of publicity used comp/results - (X Axis)

- - - - BY - - - -

actual number of entrants - (Y Axis)

Number	I	I	I	I	I	I	I					
Row %	I	I	I	I	I	I	I					
Column %	I	I	I	I	I	I	I					
Total %	I	3	I	4	I	6	I	7	I	8	I	Row Totals
	I		I		I		I		I		I	
3	I	0	I	0	I	0	I	1	I	0	I	
	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I	1
	I	0.0	I	0.0	I	0.0	I	50.0	I	0.0	I	14.3
	I	0.0	I	0.0	I	0.0	I	14.3	I	0.0	I	
4	I		I		I		I		I		I	
	I	0	I	0	I	1	I	0	I	0	I	
	I	0.0	I	0.0	I	100.0	I	0.0	I	0.0	I	1
	I	0.0	I	0.0	I	100.0	I	0.0	I	0.0	I	14.3
5	I	0.0	I	0.0	I	14.3	I	0.0	I	0.0	I	
	I		I		I		I		I		I	
	I	0	I	1	I	0	I	0	I	1	I	
	I	0.0	I	50.0	I	0.0	I	0.0	I	50.0	I	2
6	I	0.0	I	50.0	I	0.0	I	0.0	I	100.0	I	28.6
	I	0.0	I	14.3	I	0.0	I	0.0	I	14.3	I	
	I		I		I		I		I		I	
	I	1	I	0	I	0	I	0	I	0	I	
10	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I	1
	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I	14.3
	I	14.3	I	0.0	I	0.0	I	0.0	I	0.0	I	
	I		I		I		I		I		I	
12	I	0	I	0	I	0	I	1	I	0	I	
	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I	1
	I	0.0	I	0.0	I	0.0	I	50.0	I	0.0	I	14.3
	I	0.0	I	0.0	I	0.0	I	14.3	I	0.0	I	
1500	I		I		I		I		I		I	
	I	0	I	0	I	0	I	0	I	0	I	
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0
	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0
Column Totals	I	0.0	I	0.0	I	0.0	I	0.0	I	0.0	I	
	I	0	I	1	I	0	I	0	I	0	I	
	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I	1
	I	0.0	I	50.0	I	0.0	I	0.0	I	0.0	I	14.3
Column Totals	I	0.0	I	14.3	I	0.0	I	0.0	I	0.0	I	
	I		I		I		I		I		I	
Column Totals	I	1	I	2	I	1	I	2	I	1	I	7
	I	14.3	I	28.6	I	14.3	I	28.6	I	14.3	I	100.0

Chi square = 22.74
Degrees of freedom = 20

Valid cases = 7
Missing cases = 1
Response rate = 87.5 %

Caution: 30 cells contain an expected frequency less than 5
Note: 1 row not included in Chi square calculations

types of publicity used comp/results - (X Axis)
 - - - - BY - - - -
 actual number of attendees - (Y Axis)

Number	I	I	I	I	I	I	I	I	I	I	Row
Row %	I	I	I	I	I	I	I	I	I	I	Totals
Column %	I	I	I	I	I	I	I	I	I	I	
Total %	I	3	I	4	I	6	I	7	I	8	I
300	I	1	I	0	I	0	I	0	I	0	I
	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I
	I	100.0	I	0.0	I	0.0	I	0.0	I	0.0	I
	I	14.3	I	0.0	I	0.0	I	0.0	I	0.0	I
	I	14.3	I	0.0	I	0.0	I	0.0	I	0.0	I
450	I	0	I	0	I	0	I	1	I	0	I
	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I
	I	0.0	I	0.0	I	0.0	I	50.0	I	0.0	I
	I	0.0	I	0.0	I	0.0	I	14.3	I	0.0	I
	I	0.0	I	0.0	I	0.0	I	14.3	I	0.0	I
500	I	0	I	0	I	0	I	1	I	0	I
	I	0.0	I	0.0	I	0.0	I	100.0	I	0.0	I
	I	0.0	I	0.0	I	0.0	I	50.0	I	0.0	I
	I	0.0	I	0.0	I	0.0	I	14.3	I	0.0	I
	I	0.0	I	0.0	I	0.0	I	14.3	I	0.0	I
1200	I	0	I	0	I	0	I	0	I	1	I
	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0	I
	I	0.0	I	0.0	I	0.0	I	0.0	I	100.0	I
	I	0.0	I	0.0	I	0.0	I	0.0	I	14.3	I
	I	0.0	I	0.0	I	0.0	I	0.0	I	14.3	I
2300	I	0	I	1	I	0	I	0	I	0	I
	I	0.0	I	100.0	I	0.0	I	0.0	I	0.0	I
	I	0.0	I	50.0	I	0.0	I	0.0	I	0.0	I
	I	0.0	I	14.3	I	0.0	I	0.0	I	0.0	I
	I	0.0	I	14.3	I	0.0	I	0.0	I	0.0	I
5000	I	0	I	1	I	1	I	0	I	0	I
	I	0.0	I	50.0	I	50.0	I	0.0	I	0.0	I
	I	0.0	I	50.0	I	100.0	I	0.0	I	0.0	I
	I	0.0	I	14.3	I	14.3	I	0.0	I	0.0	I
	I	0.0	I	14.3	I	14.3	I	0.0	I	0.0	I
Column	I	1	I	2	I	1	I	2	I	1	I
Totals	I	14.3	I	28.6	I	14.3	I	28.6	I	14.3	I
	I	14.3	I	28.6	I	14.3	I	28.6	I	14.3	I

Chi square = 22.75
 Degrees of freedom = 20

Valid cases = 7
 Missing cases = 1
 Response rate = 87.5 %

Caution: 30 cells contain an expected frequency less than 5

planned publicity value - (X Axis)
 - - - - BY - - - - types of publicity planned comp/results - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
0	0	1	2	3
	0.0	33.3	66.7	42.9
	0.0	50.0	50.0	
	0.0	14.3	28.6	
1	0	0	1	1
	0.0	0.0	100.0	14.3
	0.0	0.0	25.0	
	0.0	0.0	14.3	
2	0	1	0	1
	0.0	100.0	0.0	14.3
	0.0	50.0	0.0	
	0.0	14.3	0.0	
3	1	0	1	2
	50.0	0.0	50.0	28.6
	100.0	0.0	25.0	
	14.3	0.0	14.3	
Column Totals	1	2	4	7
	14.3	28.6	57.1	100.0

Chi square = 6.12
 Degrees of freedom = 6

Valid cases = 7
 Missing cases = 1
 Response rate = 87.5 %

Caution: 12 cells contain an expected frequency less than 5

- - - - BY - - - - actual publicity value - (X Axis)
 types of publicity used comp/results - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
3	1 100.0 100.0 33.3	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 33.3
4	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 100.0 50.0 33.3	1 33.3
6	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0
7	0 0.0 0.0 0.0	0 0.0 0.0 0.0	1 100.0 50.0 33.3	1 33.3
8	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0 0.0 0.0	0 0.0
Column Totals	1 33.3	0 0.0	2 66.7	3 100.0

Chi square = 2.99
 Degrees of freedom = 2

Valid cases = 3
 Missing cases = 5
 Response rate = 37.5 %

Caution: 6 cells contain an expected frequency less than 5
 Note: 1 column & 2 rows not included in Chi square calculations

actual publicity value - (X Axis)

- - - - BY - - - -

actual number of entrants - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Totals

3	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
4	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
5	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
6	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
10	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
12	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
1500	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Column	I	I	I	I
Totals	I	I	I	I

Chi square = 2.99
Degrees of freedom = 2

Valid cases = 3
Missing cases = 5
Response rate = 37.5 %

Caution: 6 cells contain an expected frequency less than 5
Note: 1 column & 4 rows not included in Chi square calculations

actual publicity value - (X Axis)

- - - - BY - - - -

actual number of attendees - (Y Axis)

Number	I	I	I	I
Row %	I	I	I	I
Column %	I	I	I	I
Total %	I	I	I	I
	High	Medium	Low	Row Totals
	I	I	I	I
	I	I	I	I
	I	I	I	I
300	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
450	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
500	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
1200	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
2300	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
5000	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
	I	I	I	I
Column	I	I	I	I
Totals	I	I	I	I

Chi square = 2.99
Degrees of freedom = 2

Valid cases = 3
Missing cases = 5
Response rate = 37.5 %

Caution: 6 cells contain an expected frequency less than 5
Note: 1 column & 3 rows not included in Chi square calculations

